

# COAL AGE

McGraw-Hill Company, Inc.  
James H. McGraw, President  
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Devoted to the Operating, Technical and Business  
Problems of the Coal-Mining Industry

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Engineering Editor

Volume 27

NEW YORK, MARCH 12, 1925

Number 11

## The Tenant Makes the House

IN THE LAST FEW years there has been no great improvement in the outward appearance of the miner's house. It is still more or less rectangular and utilitarian. It still aligns itself as one of a serried row. Is it not true that the improvement is more in comfort and convenience and in the use of paint than in architectural lines?

Nevertheless, mining towns have improved. A tenant with an eye to gardening and with a fence to protect his efforts, if he is willing to work like any other than a mining tenant, can have a pleasant home even though the shape of the house be no more pretentious than that of a large packing box. Unfortunately, the miner, unless encouraged, does not take kindly to floriculture or domestic gardening. Too often he has lived in towns where cattle, pigs and fowls wandered unhindered and destroyed everything, and consequently the genius of gardening has largely deserted the occupation. It needs fostering and renewing.

He has dwelt where the rock dump slid down to the back porch, where barrels and kegs littered ravines, where the ground was bespread with rubbish and rendered fetid by wash water, so it takes time to interest him in civic betterment. He does not sense the loss that he sustains by living in such squalid surroundings. He it is who makes the house a home, both inside and out. Give him a fence, a load of manure and an inspiration to turn both to good account and what look like shacks today may look like homes a year from now, for the tenant makes the house as much or more than the landlord.

## A Stable Industry

THOSE OF US who have not had our eyes or ears trained by pedants and who continue in consequence to rely on our untutored perceptions as to art are not struck so forcibly by the inartistic character of the things we see or the sounds we hear, as we would be if we had been industriously schooled, and, similarly, it is only after years of elaborate training by experts in Washington that the public has begun to sense that the coal industry is a most irregular form of activity. True, seasonally it comes and goes, but the product of one year is not greatly different from that of another. Last year's production in the bituminous fields was only 11.6 per cent less than in the year before and the output in the anthracite region declined only 3.6 per cent, both these statements being based on the partially revised figures of the U. S. Geological Survey. Nevertheless, nearly everybody believed that the production of coal had slumped even more materially.

It was generally known, however, that the non-union fields had been doing much of the business formerly done by union mines. Mr. Tryon recently showed how Kentucky had produced last year 26 per cent more coal than in 1920, West Virginia 22 per cent more and

Alabama 2 per cent. Now comes word which shows that the Chesapeake and Ohio in 1924 carried 30 per cent more coal than in 1923. Thus it appears that some sections of the country did what the other sections failed to do. Part of the increased activity in those regions arose from the fact that the Chesapeake & Ohio has revised its methods of doing business and is today one of the more efficiently managed roads. Frequently in the past, when the market held out opportunity, the railroads shut the door tight. "No equipment" on the railroad prevented operation as truly as "No orders" in the market.

## Questioning the Rockefeller Plan

READING THE BOOK by Ben M. Selekman and Mary Van Kleeck entitled "Employees' Representation in Coal Mines" one is surprised that it is so slow to criticize and so ready to praise the Colorado Fuel and Iron Co.'s villages, not indeed that there is material for criticism nor lack of reason to praise conditions but because the press matter sent to the newspapers played up the alleged shortcomings of the company unduly and gave a false impression of the book. It is the old story, the evil is made a matter of comment and the good forgotten. That is not true of the book, but it may be rightly charged against the press matter by which it was heralded.

The head and front of the Colorado Fuel & Iron Co.'s offending appears to be that it does business with its employees and not with the paid agitators of the union. Most people do not like to do business with hired counsellors. It is one of the objections to all forms of courts that they are filled with lawyers who try to win a point rather than compose an issue. Furthermore, no one likes to deal with a party who thrusts himself into a controversy. The U. S. Government resents a foreigner talking to citizens in opposition to its policy. Thus Karolyi coming here is said to have been compelled to promise not to discuss politics. Other nations resent similar action on our part especially should men like a President or an ambassador address the public of those countries and try to undermine the confidence of the people in their leaders. We cannot be surprised if the Colorado Fuel and Iron Co. may have some such feeling. That it has been successful in dealing with its employees without such intermediaries is a great tribute to the *esprit de corps* of its men. Another large company which tried the same plan was not so successful.

One matter in this book that needs reference is the relative callousness of the writers to the rights of superintendents and foremen. The Russell Sage Foundation would have had the company inaugurate a severe regimen in regard to these men while showing a most kindly spirit in regard to the faults of the miners. Reading between lines one is disposed to think Mr. Selekman and Miss Van Kleeck would have liked to have seen a number of superintendents and foremen

cashiered for qualities which are obtrusively and displeasingly evident in the men who agitate for union representation and who have met with such unswerving support from those investigators.

Those who know the officials of the Colorado Fuel & Iron Co. from top to bottom know that they are courteous beyond the regular run of men. Their miners are mostly of the same type. All we would assert is that the Russell Sage Foundation should realize that it was the duty of the company to exercise as much forbearance in one case as in the other. In everything the Colorado Fuel & Iron Co. has used excellent sense.

These self-appointed examiners of the Rockefeller Plan went to Colorado convinced that the union should be represented; they remain of the same opinion; they reiterate it. They truly report in the book the excellent condition of the camps and give them their approval; they question, however, the value of the plan. They wonder if the success rests in the Rockefeller system of representation or in the excellent good will of the company. So do we, but we do not believe that if the union were represented the social relations to either company or men would be as satisfactory as they now are.

### Presaging Accidents

**I**S THERE ANY approximate numerical relation between the occurrence of minor, serious and fatal accidents in the coal mines? If so, what is the ratio between the three types of mishaps? Does this relation vary from point to point about the mines, or in other words, with the work performed? Is it possible to forecast the probable occurrence of a serious or fatal accident, from a train of minor accidents and take such steps as may be necessary to prevent it?

It is probable that all of the above questions may be answered in the affirmative. It is also probable that the numerical relations between accidents of the various kinds will vary more or less widely not only from year to year and from company to company but from field to field, from mine to mine in a given field and even from district to district in the same mine. Reasons for these variations are obvious and need no further comment.

To illustrate what may be accomplished by any company toward establishing some guide that may be used in forecasting probabilities or in other words recognizing danger points, the figures of one large West Virginia company may be considered. This firm divides its accidents into those occurring inside the mine at or near the working face, those happening inside the mine, but not at the face (on haulage roads, etc.) and those taking place on the surface.

During the year 1924, this company had 7 fatal, 50 serious and 146 minor accidents at the working face; 10 fatal, 33 serious and 61 minor accidents underground but remote from the face, and 10 serious and 33 minor accidents but no fatalities on the surface. The total accidents sustained thus included 17 fatalities, 93 serious and 240 minor mishaps. From these figures the following relations may be established: At the face the ratio of fatal to serious and to minor accidents is 1:7:21. Underground but remote from the face this ratio becomes 1:3:6. For the entire underground operation it is 1:5:12. On the surface, since there were no fatalities, the ratio becomes that of serious to minor accidents only. This ratio is that of 10:33 or 1:3.3. For all company operations the ratio becomes 1:5.5:14.

These figures, of course, apply only to the year 1924

which in many respects was abnormal so far as accidents were concerned. Other years would unquestionably vary the relations above set forth and probably the records of several years would be necessary before a fairly reliable average could be obtained.

Naturally the question arises, when such a relation is established between accidents of various kinds, what practical use can be made of it? Simply this, that any and every minor mishap is an indication of the possibility of a serious or fatal accident. The occurrence of a minor accident thus serves as a danger signal—a semaphore warning of peril ahead.

### Times Like These

**W**HERE COMPANIES are not working under high pressure they have time and opportunity for modernizing their mines. One hesitates to introduce an improvement that closes down a mine when every day of unnecessary idleness means a big loss of profit. But when a suspension brings no loss, radical changes involving days of idleness are faced with composure.

Moreover, in times of business activity no one cares to introduce machinery that may precipitate a strike just at the moment in the cycle of affairs when profit can be made. Most men prefer to delay action till some later time. It would be an act of imprudence to make such a change, for the workmen can shift themselves readily from mine to mine, are independent and disposed to cavil at any change. Besides what does it matter what costs are if prices are large enough to far outshadow them?

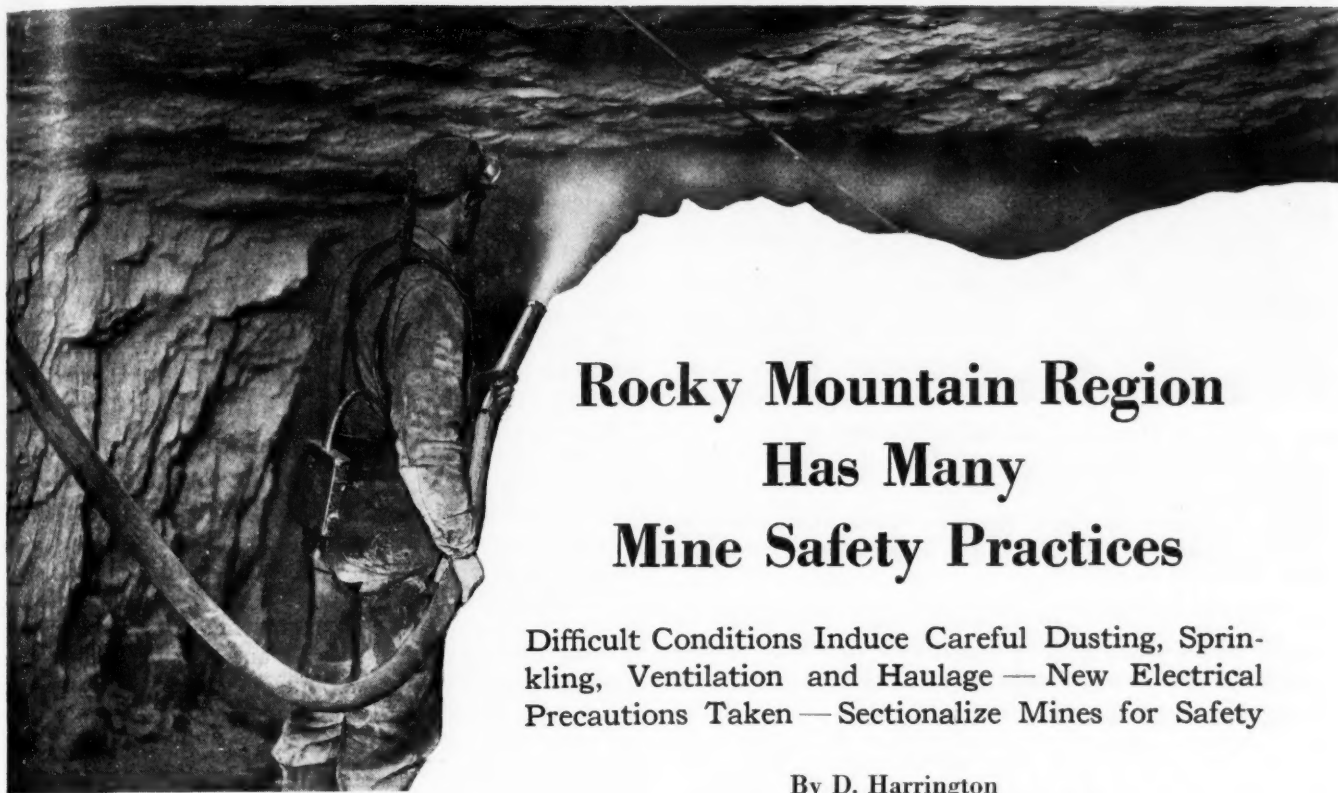
Just now, the mine workers are slowly bringing themselves to believe that only by efficiency can they hope to keep their jobs. They realize that the mine that is not modernized does not give its men a fair opportunity to work. Gradually they are sensing that they must fall in with, and even welcome, every modernizing change. It may lay a few men off but that is better than having a like effect on them all.

In consequence, times are ripe for radical revisions of mining methods. A certain ripeness has come out of years of experience and discussion. The problems are realized and can be met. In a little while the process of mechanization will take a turn as it did when mechanized haulage and mechanized cutting were introduced. When the hill of introduction was once climbed, industry coasted down hill with increasing speed till mechanical mules and the electric coal saw had almost entirely replaced hand methods.

But some remote sections delayed. They waited for better times, and when the cycle of business swung up they tried to introduce machinery, but they found the miners were able to resist its entry into their mines and their interest in introducing it was limited, for were they not making profits as it was? Why jeopardize those opportunities? In consequence those sections of the country found themselves almost incapable of installing undercutters. They had to wait till a time like the present came once more, making them keenly anxious to force the introduction of the machinery and the men less averse to accepting it.

Whether the union retains its hold or loosens it the attitude toward new types of machinery will be greatly modified in 1925 at bituminous mines. The plough has thrust its sharp edge into the field of industry, it has disturbed the ground and if the seed is planted a bumper crop of new and better methods can be confidently expected.





## Rocky Mountain Region Has Many Mine Safety Practices

Difficult Conditions Induce Careful Dusting, Sprinkling, Ventilation and Haulage — New Electrical Precautions Taken — Sectionalize Mines for Safety

By D. Harrington

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High Pressure Dusting in Utah Fuel Co.'s Mine

IN FEBRUARY, 1923, the Rocky Mountain Coal Mining Institute comprised of coal-mining interests of Colorado, Utah, Wyoming and New Mexico appointed a safety committee which after eighteen months deliberation, many open sessions and discussions by mail, brought in a report that was adopted by the Institute in the summer of 1924. This report took an advanced stand upon coal-mine safety and put the coal-mining representatives of the Rocky Mountain States just mentioned in the vanguard as advocates of up-to-date safety practices in coal mining.

The report, issued in pamphlet form by the Institute in the fall of 1924, has forty-six numbered paragraphs each containing conclusions or recommendations or both. A strong stand was taken in favor of exercising due care in the placing and maintenance of electrical equipment in coal mines and especially in those mines known to have explosive gas. Open lights were condemned for use in any mines in which any explosive gas is found, and the use of approved electric safety lamps is advocated. It was recommended that none but magnetically locked approved flame safety lamps should be used, and a number of precautions were advocated toward elimination of danger from methane. Use of

water near and at working faces was strongly advocated to "kill" the coal dust at its source; rock dusting was strongly commended and rockdust barriers were advocated as a means of surrounding or guarding sections of mines. Black powder for use in coal mines was condemned, and recommendations were made that all holes should be drilled, tamped and shot by competent shotfirers and that practically all shots be fired by electricity—after all persons except shotfirers had left the mine. A number of other safety measures were advocated such as a definite system of setting timber in each mine, periodical safety inspection of mines by outside mining men, the compilation and distribution of safety rules in pamphlet form, etc.

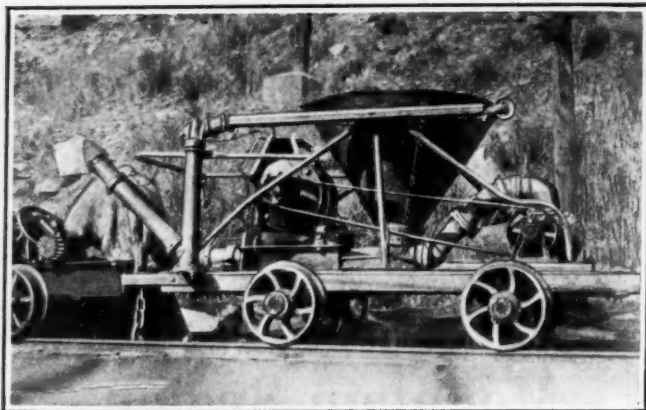
To show that the practices advocated in this safety report are being, at least partly, put in operation these notes are offered on safety in western coal mines. They are almost wholly based on my personal observations and have reference to the states of Colorado, New Mexico, Utah and Wyoming with their many different conditions.

The coal in these states is mined from seams the thickness of which varies from 2 ft. 6 in. up to nearly 100 ft.; the coals grade from higher quality lignite or so-called sub-bituminous to high-grade bituminous, and even some anthracite. Natural coke occurs in several sections adjacent to dykes or other igneous intrusions, but the coke though of good grade, is

### NEW METHODS TAME WESTERN MINES

How does the Rocky Mountain region increase the factor of safety in its coal mines? Where the range of mining conditions is so wide as that prevailing between the 80-ft. beds of Wyoming, the inflammable coals of Utah, the multitudinous seams of Colorado and the dry mines of New Mexico it is only natural that men working the mines in those states should have learned a lot about reducing danger. To summarize this body of knowledge for the benefit of the man who wants to learn as much as he can about Rocky Mountain methods within a few minutes, this article was written.

NOTE—At Sunnyside, Utah, the type of dusting shown in the headpiece has been used for several months. The discharge of limestone dust against roof and ribs under pressures varying from 60 to 80 lb. per square inch seems to effect a better dust coating in those mines with a smaller quantity of dust than was obtained by blowing the dust on at low pressure.



#### A Pioneer in the Safety Movement

This dusting machine, which covered about ten miles of haulage entry in the Delagua mine of the Victor-American Fuel Co. in 1913-15 blazed part of the dust trail now laid through the Rocky Mountain coal mines. It was a low-pressure machine using a 3-hp. motor driving a 666-r.p.m. blower with a 4-in. discharge. Dust was drawn into the discharge pipe from a hopper 3 ft. high and 44 in. in diameter at the top narrowing down to a 4-in. opening at the bottom.

not present in commercial quantities. The pitch of seams varies from level to practically vertical. A few mines are quite wet, though most of them are dry and dusty. Some mines are essentially non-gaseous, others are extremely gassy—one mine with a daily output of about 1,000 tons of coal sends to the surface daily over 2,000,000 cu.ft. of methane. Thus practically all conditions of coal mining are to be found in the region.

Some of the coals of these western states have dust which is probably the most flammable found in the United States; and the dusts of all the coals, except possibly the anthracite, are unusually flammable—even the coal dusts of Wyoming, long held to be practically non-explosive, having been responsible during the past eighteen months for two widespread explosions with a loss of considerably over one hundred lives.

In general the mines are dry, the coal is more or less friable, volatile matter is high in proportion to total combustible, the air entering the mines is uniformly dry and abstracts moisture from the mine workings, there is much highly flammable resinous material in the coal, many of the mines have oil seeping from floor or roof, many of the mines are gaseous, some having explosive gas other than methane (probably more flammable than methane) and mines that have worked for years without ever having seen a gas cap have overnight become distressingly gaseous.

In many instances the coal-mining laws in these states (as well as in most of the states of the Union which have coal mines), were formulated a number of years ago and were probably inadequate even when originally put into commission. They have not kept pace with the rapid development of the coal industry. As a consequence the state laws as to coal mining are inadequate except possibly in Utah where there is a flexible arrangement under which up-to-date regulations may be formulated by the operators and inspection force and may be issued by the State Industrial Commission, and these regulations under certain circumstances assume essentially the full force of laws. Also, many of the operating mines of Utah have adjacent territory being operated under federal lease. There the fairly drastic federal leasing operating regulations apply, and there is an arrangement between the State of Utah and the federal government by which federal mine inspection is to a large extent combined with state inspection.

In general, the larger mining companies of the West, for their own protection, have regulations much more comprehensive and drastic than the law demands, but on the other hand the laxity of the law allows the reactionary or "hard-boiled" operator, whether of large or of small properties, to use practices which are likely to be productive of wholesale slaughter, and unfortunately for the industry there still remain operators either so ignorant or so wilfully "bull-headed," as to take chances even when doing so may cost not only lives but also immense property loss. However, the mines with poor practice frequently "get by" without any great misfortune, whereas those with up-to-date methods sometimes suffer disaster due to some one person's overt act.

Though all state laws do not demand fans for ventilating purposes, practically all western mines now have a fan or fans, and where mines are gaseous there are in many instances two fans of which one is held in reserve; or there is one fan with two sources of power such as steam and electricity, or gas engine and electricity, or both alternating and direct current, or in some instances a separate electric motor immediately available in case of the failure of the one in operation. One gaseous property has adopted a rope drive to prevent the possibility of an arc or flame igniting the gas in the air exhausted by the fan.

Several mines have automatic devices giving notification of any unusual diminution in the pressure of the fan such as from fan stoppage. At least one mine has a device automatically cutting all electric current out of the mine upon failure of or undue lowering of fan ventilating pressure. One mining company has attached to its fan motors a controller somewhat like that on street cars and, with this device, it increases or decreases the flow of mine air almost at will as there are available about ten different speeds. Many mines have continuous automatic water-gage recording devices, and the charts are used freely in interpreting the circulation of underground air currents.

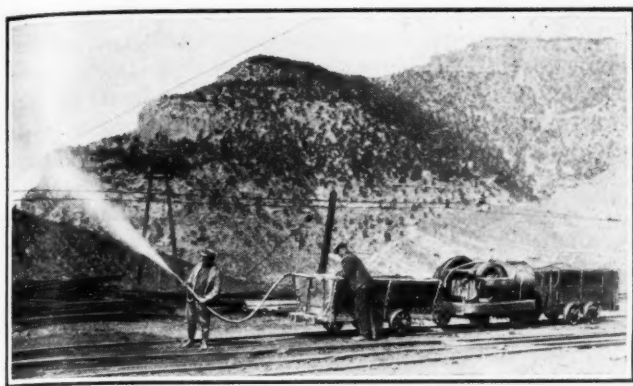
The use of continuous current in ventilation though still found, is rapidly giving place to systematic splitting. Overcasts and stoppings are generally though not invariably of fireproof material. In Colorado and Utah no flame safety lamp is allowed underground except magnetic locked types pronounced permissible by the U. S. Bureau of Mines, and many if not most of the larger mining companies of Wyoming and New



#### Mine Entry Before and After Taking

Here is a section of undusted rib alongside a section that has been thoroughly dusted with limestone under high pressure. The air pressure not only removes the coal dust lodged on the surfaces, but makes the rock dust stick in sufficient quantity. The coating is said to be as free from coal dust and as thick as that obtained by the application of dust mixed with water.





**High-Pressure Rock Duster at Sunnyside, Utah**

This type of equipment has won much favor among mines in which coal dust is as flammable as any in the world. The dust problem has been studied intensively there and, although there are still two or three schools of thought among mining men, high-pressure dry dusting is accepted by the majority.

Mexico follow the same rule. Some mines test flame safety lamps in a gas-filled box before permitting them to be carried into the mine.

At least one gaseous mine is experimenting with the use of the Burrell methane detector instead of the flame safety lamp whenever inspections are being made while the shift is in the mine; two large companies take samples of mine air periodically and do their own analytical work. From the results obtained, the policies as to stoppings, overcasts, etc., are determined or at least largely influenced.

Recognizing that "what is everybody's business is really nobody's business" (a dangerous condition when applied to ventilation of mines), two large western coal-mining companies, each operating numerous mines, have placed the ventilation of all its workings under the direction of one man. One mine which has much gas and which is pulling many pillars, has adopted a policy of keeping all pillared regions completely surrounded with aircourses which are kept open. This policy is the reverse of the practice of sealing caved regions which is coming into much use in the West.

In Utah it is against the state regulations to move standing gas when the shift is in the mine, and some mining companies are requiring firebosses to report *all* methane found, even the smallest cap.

Utah prohibits the firing of any shots so long as the shift is in the mine, and does not allow black powder or dynamite to be used in shooting coal. Most of the larger coal companies in New Mexico, Colorado and Wyoming have also adopted permissible explosives, and the Colorado law requires shots to be fired by certified shotfirers. Some of the Utah, Colorado and New Mexico mines fire all shots by electricity from the surface, when all persons, including the shotfirers, are out of the mine, nothing but permissible explosives being used; this in my opinion, is by far the best and safest of coal-mine blasting systems.

Some of the western coal mines now using permissible explosives for shooting coal but using dynamite for rock are experimenting with permissible explosives for that work also, with a view to eliminating dynamite as well as black powder wholly from coal mines. Much experimental work is being done with various methods of air spacing in loading and tamping holes, also with the use of permissible explosives with maximum density and minimum rate of detonation the purpose being to make in shooting a minimum percentage of fines. In Utah

and Colorado the use of coal dust for the tamping of blasting holes is not allowed, and some of the larger coal companies of Wyoming and New Mexico have also established a similar rule.

Machine undercutting or overcutting of coal has almost displaced solid shooting or hand mining, though a few particularly gaseous mines and some pillar workings still retain hand mining or modified solid shooting. There are also a few of the mining companies whose officials do not seem to realize the dangers of solid shooting and of the use of black powder and fuse but these are rapidly becoming fewer. In general, these western states have good blasting practices, and in this are setting good examples for the other coal-mining regions of the country.

Realizing that coal dust is dangerous to health and safety, these coal mines in the Rocky Mountain region, especially in Colorado, Utah, Wyoming and New Mexico, have been pioneers in devising and applying measures and methods against coal dust. The Delagua mine, near Trinidad, Colo., used rock-dusting methods quite freely as early as 1911, there being about ten miles of entry thoroughly dusted in that mine in 1915. In the spring of 1923, rock dusting of entries with simultaneous sprinkling of faces was introduced on an extensive scale in the Dawson, N. M., mines, and now at least sixty miles of entry are thoroughly rock-dusted. A large number of rock-dust barriers have been placed to supplement the rock-dusting and sprinkling.

#### WHERE SPRINKLING IS NOT PERFUNCTORY

Utah pioneered in systematic sprinkling. After the Winter Quarters explosion in 1900, all Utah coal mines were thoroughly piped with water, working places being kept well sprinkled. For over 20 years the state was free of explosions. There were many ignitions of gas or dust or both, but the sprinkling prevented disasters. Though there were two serious mine explosions in Utah in 1924, they haven't shaken the faith of the Utah operator in watering methods; rather, they have spurred him toward extension of the use of water into abandoned open places which had been but imperfectly sprinkled heretofore. And, in addition, the Utah operators unanimously aided in formulation of state regulations requiring the use of rock dusting on intake aircourses as far as freezing occurs or at such places as the state inspector may designate; thus Utah pioneers as to the requiring of rock dusting just as she pioneered in sprinkling requirements.

The explosion-prevention practice in Utah and at Dawson, N. M., is to use watering methods at and around the region of the face. This involves the provision of a water spray on the cutting chains of machines, the use by the miner of a water spray to sprinkle the entire area near the face including the coal pile, several times daily, and the use of water by day-pay workers on all accessible places of the interior of the mine which are not reached by the face worker or which are not rock dusted. The rock dusting is done on floor, ribs and roof of intake air courses beyond the zone of freezing and on some main haulage slopes and entries, and in addition each section of the mine is protected by carefully placed rock-dust barriers.

In addition to these practices, which are compulsory under the Utah regulations, many mines in Utah and some in New Mexico require the face worker to spray the top of all loaded cars before they leave the rooms. Some mines run a water car through rock-dusted main-

haulage entries wetting down the fine coal dust between and just outside the track rails, and some mines sprinkle the rock-dusted floor and ribs, the rock dust aiding materially in absorbing and retaining moisture.

In rock-dusting, some mines remove the loose material from the floor and then cover it with surface soil or "adobe," which, in intake aircourses, becomes dry and finely divided and upon being thrown into the air by men, animals and cars settles on ribs, timbers, roof and floor. During the past year and a half the West has dusted one hundred or more miles of underground entry in this manner, using at least 20,000 tons of adobe. Generally this adobe ballasting is supplemented by blowing pulverized dust such as shale, limestone, or "silver sand" (leucite) or metal-mine mill tailings against ribs and roof. Some rock dust has been spread by hand, but usually each mine has its own make of machine for the purpose, the most popular being one electrically driven with small low-pressure blowers. A few companies use a concrete projector, blowing dry dust or dust mixed with water against the ribs, roof and floor in the form of mud. Where successive applications are made and the mud dries, the effect usually is good. One company has devised a special mud-throwing machine.

Probably the best method of rock dusting used in the West is that of utilizing electrically driven portable air compressors in Utah mines and plastering the dry pulverized dust against rib and roof by air under pressure of 40 to 70 lb. per square inch. By using the water lines the compressed air is available not only on haulage entries but in practically all open parts of the mine as all open parts of Utah mines are piped. This pressure dusting (which, of course, can also be done to a considerable extent with the cement gun) drives coal dust out of crevices and forces the pulverized limestone, or leucite, into the spaces thus vacated. Exposed surfaces are covered to a depth of  $\frac{1}{8}$  to  $\frac{3}{8}$  of an inch with dry dust, a much better resultant job than the  $\frac{1}{16}$  to  $\frac{1}{8}$  of an inch coating usually made by the low-pressure blower or by an air-settling system.

One mine crushes its own shale and immediately applies the dust to mine workings using a combination machine for the purpose. Most of the dust used in the West, however, is purchased from more or less distant plants and shipped to the mines ready for use; crushing at the mine or by the mining company is not yet successfully practiced in the West.

Preheating the intake air by steam radiators with introduction of steam and water sprayed into the heated air has for years been the main reliance of one large western coal company against explosions of dust, this preheating and spray system being usually supplemented by water car or by sprinkling with hose in the interior of the mine. One company sprinkled calcium chloride along a main intake haulage road, and while the result was satisfactory as to holding moisture, the excessive cost of the chemical prevented the extension of the practice.

Some of the larger western companies have, during the past two years, installed a large number of permanent water sprays in abandoned workings which cannot be sealed or in places where few men, animals or cars travel, and the result of the first installations have, in each instance, been so satisfactory in holding moisture that the installations have been greatly extended.

At least one large western company in introducing rock-dusting practices, immediately started systematic sampling and analyzing of the dust in the workings and where the percentage of combustible ran above a fixed minimum (which was decidedly low) the place was redusted. In order to obtain definite information as to the explosion hazard, several coal mines in the Rocky Mountain States have sent large samples of coal (two to five tons) to the Experimental Mine at Bruceton,

Pennsylvania, and the resultant tests and confidential reports by the U. S. Bureau of Mines have shown the extreme explosibility of these western coal dusts and have indicated the definite quantities of rock dust necessary to prevent explosions.

In its haulage practice the West has numerous safety provisions. One company, solely to reduce dust spillage on haulage entries, changed from end-gate to solid cars requiring the installation of a rotary dump and also restricted

topping of cars to about 6 in. Many mines use rigid shafts and "gun" rather than tail chains in mule haulage. Wooden rails are practically never used in the West. Usually frogs and switches are well blocked to prevent animals or men from getting their feet caught and suffering broken legs or other injuries when run over by cars. Cars are attached to each other not only by the usual pin and link or clevis but also by safety chains and hooks which usually are kept in operation.

Some mines operating inclines have safety devices on man trips so that in case an entire trip or one or more cars of the trip break away, an automatic stop immediately acts.

One company realizing the many dangers of electric trolley locomotives not only for auxiliary or gathering hauls, but also on main hauls, has gone to much expense in experimentation with storage-battery locomotives for long main hauls with heavy load.

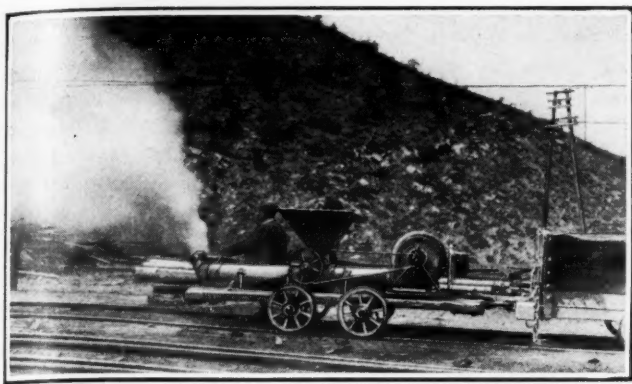
Utah was a pioneer in the introduction of electricity into coal mining and in one of its mines has recently taken a distinct forward step in an electrical installation in which each section of the mine has its own transformers so protected that electrical trouble in one section does not affect any other section; all power is transmitted in practically foolproof cables and at the point where the trailing cable of the mining machines is connected to the power line is an enclosed connector or switch so that there is no open arc when connecting or disconnecting the "nip."

One company has at each hoist a button near the hoistman so that in case of a runaway trip, the pressing of the button by the hoistman cuts all electrical power off the region. Many mines have removed power lines

### INCREASE ELECTRICAL SAFETY

Trouble in any one section is localized in some Rocky Mountain mines by having separate transformers for each section of the mine. A switch prevents an open arc being formed when trailing cables are connected. In some mines power lines are placed low so that the arc on connection of the line with the trailing cable is so low that it is not likely to be in gas. Automatic contrivances shut off power from mine when fan pressure declines. Button near hoistman enables him to prevent a second Dolomite explosion by cutting off power when cars run away.





#### Dusting Machine Giving Low-Pressure Cloud

This machine is still in service in Utah for its usefulness under certain conditions is admitted, but it affords a less perfect dust coating on roof and ribs than a machine applying the dust under higher pressure and uses more rock dust per lineal foot of entry.

from main haulage roads, especially inclines, to prevent possible explosion in case of trip wrecks or similar accidents. Some companies have established the practice of placing near the floor the bare spots on power wires for attachment of the "nip" of the trailing cable of mining machines with the idea of having the arc in attaching or detaching the "nip" near the floor rather than near the roof where any gas which might be present would certainly be found.

Some companies make it a definite practice to keep power wire insulation in good repair by taping or insertion of new wire and in these mines bare wires or bare spots around working places or faces are rare. Some very gaseous western mines allow no electricity near the face, and the electrical pumps required are held strictly on intake air, with an automatic contrivance cutting power off the mine when the fan pressure declines. Though many non-permissible electrical motors are in use in gaseous western mines, the tendency is toward change to strictly permissible equipment (where such is available) when electricity is used near gaseous faces or those that possibly may prove gaseous.

The West is becoming strongly of the opinion that its coal mines should be held in comparatively small, distinct units in order to localize such troubles as fires, explosions, squeezes, etc. Hence panel systems are being established and in most instances these panels are held absolutely separate from each other and sealed as soon as active work in the panel ceases. It is usually considered poor practice now to connect mines even where the mines belong to the same company and in at least one instance a large company has gone to considerable expense to divide large mines into smaller units establishing a maximum of about 200 men in each unit, the division of the mine being accomplished by placing of heavy explosionproof stoppings. When an explosion occurs in one unit these powerful stoppings actually hold. Already it is thought that they have probably saved 200 lives.

Though many mines still try to ventilate abandoned workings, there is a distinct trend in these western mines, toward the effective sealing of workings which are not being used, even if these seals may have to be broken within a few years or even within a year in some cases, as open non-working places are known to be dangerous as to dust, as to falls and as to trespassers.

A rule in more or less general force in the western mines is that props must be kept from 2 to 2½ ft. back

from the track rail; and in entries many mines hitch timber legs into the ribs or eliminate the legs and hold the caps in hitches in the ribs near the roof. Many mines require that timber shall be set at certain specified intervals, but this is done with the proviso that if timbers are also needed at other places, they should be set also. In placing seals where the ground is heavy or squeezing, skin-to-skin timber stoppings are being used in preference to concrete or other strictly rigid construction.

In assigning men to safety-inspection work, some Western companies are choosing active, young, wide-awake men who have had operating experience and these men are given operating authority above that of the mine foremen, and in cases, above the superintendent; hence the safety inspector can put his ideas into more or less immediate execution.

Most of these western mines have efficient systems of checking men into and out of the mines and some of the mines have printed pamphlets giving to all underground men concrete instructions covering their obligations as to the safety of the mine, of their fellow men and of themselves.

Some mining companies are very careful to maintain efficient trained crews in use of oxygen breathing apparatus together with well-equipped and well-maintained apparatus stations. One company tries to have its force trained in first-aid methods to such an extent that at least seven out of every ten men are thoroughly conversant with first-aid treatment.

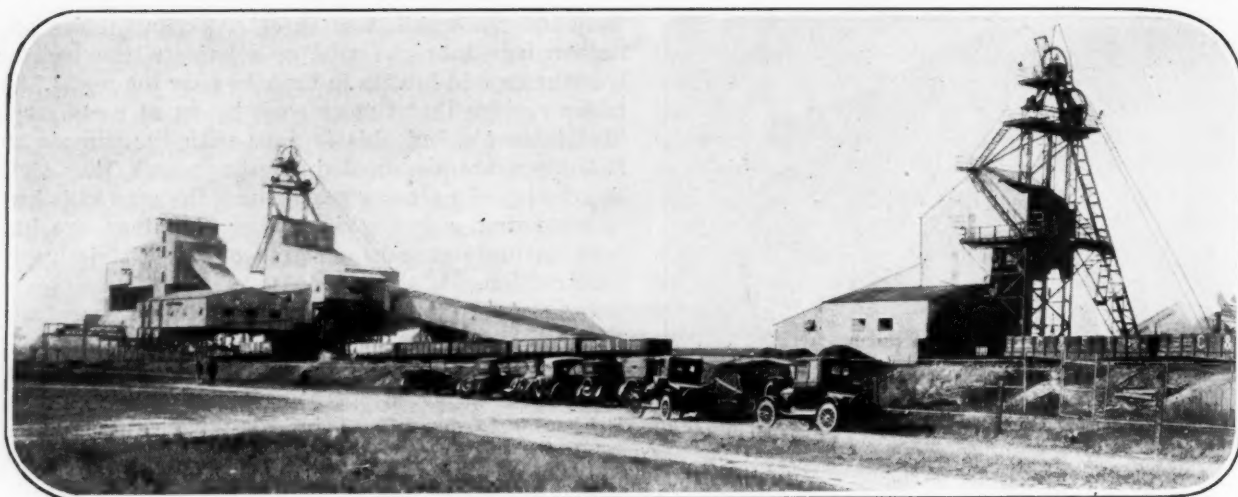
Many other good practices in these western coal-mining states could be enumerated and it may be interesting to note in closing that the advanced Utah mining regulations adopted in the spring of 1924 and made effective in the summer and fall of 1924 are being used as a model in connection with bills which are to go before the legislature of several western and probably some eastern coal-mining states with a view to bringing coal-mining laws up to date. Though many poor practices are still in effect in western mines and many dangerous conditions still exist I am of the belief that as a whole, the safety methods and practices in these states are far better than can be found in general in the coal mines of the United States.



Courtesy of United Mine Workers Journal.

Zowie!

Very small, smart boy out of sheer exuberance of spirit throws snowball at extremely respectable gentleman who to all appearance has done no one an injury. We congratulate Ellis Searles, editor of the United Mine Workers' publication, on the excellent spirit of this cartoon.



## New Orient Grooming to Beat All Records

Planned to Produce 12,000 Tons Daily When Fully Developed—  
Uses 6½-Ton Cars, 13-Ton Skips and World's Largest Hoist, Yet  
Despite Its Big Output, It Is Extremely Flexible in Operation

**A**MONG THE BIG coal mines of Illinois—and that state is unusually well favored with such installations—towers the New Orient a property distinguished for the size and quality of its coal deposit, for its 12,000-ton ultimate daily capacity, for its 4,000-hp. hoist and for a long list of other superlative qualifications that fit it to be, at least eventually, the "world's greatest coal mine."

But it is not the Chicago, Wilmington & Franklin Coal Co. that is claiming this blatant title for its new operation. President George B. Harrington, describing the property to the American Institute of Mining and Metallurgical Engineers in New York, on Feb. 17, merely called it "an unusual coal mine" and a property that "promises soon to become one of the largest mining operations of its kind." Already it has hoisted 7,185 tons in a single day and over 161,000 tons during January of this year. This latter record is the equivalent of 6,200 tons per day. Yet this mine has only barely started its career.

### HAS PRODUCED BIG VOLUME

This company has had long experience with large coal operations. Its principal mine, Orient No. 1, held until recently the world's hoisting record for a single day's run, that mine having produced on that day an output of 8,218 tons. It is a company that thinks in train-, not in mere carloads. Furthermore, it has been carefully planning this new mine for years and has had it under construction since May, 1921.

New Orient was built to be a mine of the future. The company, taking a long look ahead and basing its policies on experience, decided that the coal operation

The headpiece is a general view of the headworks at New Orient. At the left may be seen the rescreening plant and tippie at the main shaft. The headframe and tippie over the auxiliary of air shaft appears at the right. A conveyor connects the two tipples and transfers the coal which is hoisted in the auxiliary shaft, also that reclaimed from ground storage, to the main tippie for preparation.

Much of the material in this article was taken from a paper by George B. Harrington entitled, "New Orient, an Unusual Coal Mine," presented before a meeting of the American Institute of Mining and Metallurgical Engineers, New York City, Feb. 17, 1925.

of coming years must combine size with flexibility. Accordingly, New Orient is large yet versatile. It is designed and equipped to produce, prepare, and load, with the least effort, a tremendous volume of coal when in full operation, yet when shut down, to contract its idle-day costs to those of a small mine. In that it can accomplish this result, New Orient is, indeed, unusual.

### SHAFTS AT END OF TRACT

The map of the mine reveals the first of its many unusual traits. The two shafts are not even near the center of the extensive property—a tract measuring about 2½ miles east and west by 4 miles north and south. Instead, they are located near its southern edge. But there are sound reasons for this. The surface of the property is nearly all below flood level except for a small area at the extreme north and a narrow strip along the southern border adjoining the mining town of West Frankfort which has a population of 18,000. This narrow strip, just wide enough for an extensive surface plant and a railroad yard, was chosen because of its accessibility to labor supply and railroad transportation.

A second, although possibly a less peculiar detail of New Orient's construction, is its freedom from "strangulation." When men or materials must be taken in or out, coal in some mines is choked off at the main bottom. At this new mine, however, both the main and the auxiliary or air shafts are equipped for hoisting. By far the greater portion of the coal produced naturally travels through the main shaft, although the other outlet also can handle coal in moderate quantity on special occasions. The auxiliary shaft's pair of balanced cages, however, is intended chiefly for traffic other than coal. This auxiliary shaft measures 14x32 ft. of which 132 sq.ft. of cross-sectional area is in the air compartment. The main shaft in which the skips are installed (and in its third compartment the escape stairway) is approximately 9x32 ft. in cross section.

It is this arrangement and equipment of shafts that enables New Orient to be converted at will into a



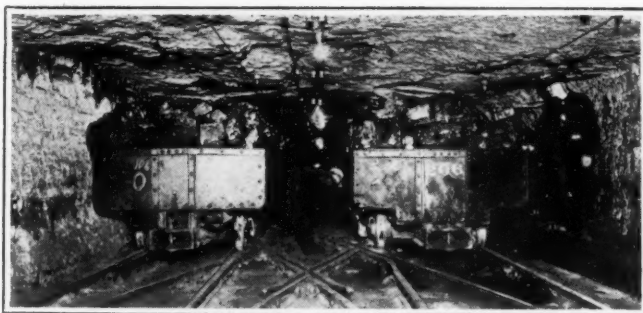
"small mine" on idle days. The maximum working time limit of six 8-hr. shifts each week, or only 48 out of every 168 hr. requires that the mine be ready for capacity production during these periods. Throughout the rest of the time only the lesser hoisting machinery need be kept in readiness. This plan effects substantial economies over the customary scheme of using the main hoist for all traffic.

The No. 6 Illinois coal bed in this property lies approximately level and about 500 ft. below the surface. It varies in thickness from 9 to 12 ft. With so large a body of coal available, as is tributary to this operation, it is easy to see that the active life of the mine will be a long one. Accordingly, the mine was designed, laid out and equipped for permanence.

#### ADOPT PANEL SYSTEM

Underground, the panel system, which has worked well under the conditions existing in this field, has been adopted. The territory will be developed by two main entries, one running directly north from the hoisting shaft, about  $\frac{1}{4}$  mile from the east boundary line of the property, and the other paralleling it about  $\frac{1}{4}$  mile farther west. From these main roads, cross entries will be driven, 1,650 ft. apart, and from the cross entries the stub entries will extend into the panels. The two main entries are now being driven each consisting of four passages. Two of these openings are used for inbound and outbound haulage and the other two for air. Seventy-pound rail is used on main haulages, 60-lb. in the cross entries and 30-lb. steel in panel entries and in rooms. The pit cars employed hold 6½ tons each and are of all-steel, solid-end construction, equipped with semiautomatic couplers. The gage of the track is 42 in.

The bottom at this mine is of the usual simple plan with getaways and runarounds on each side. The main



**Where Coal Reaches the Shaft Bottom**

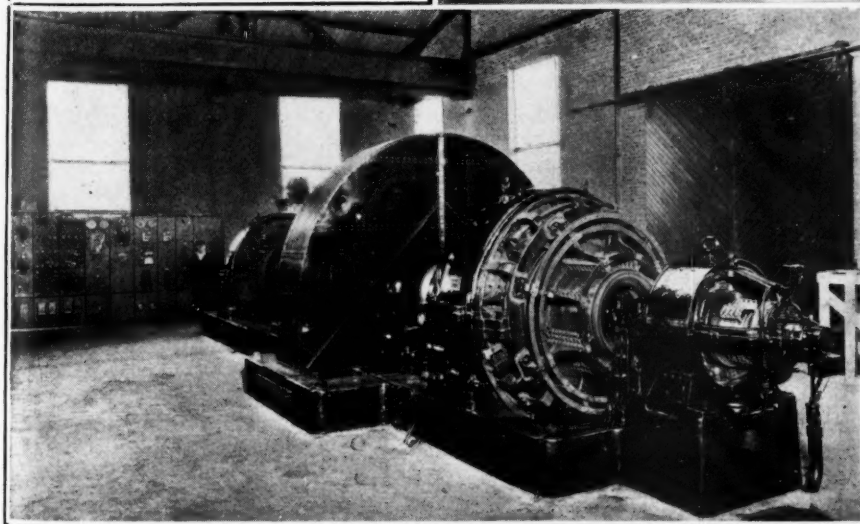
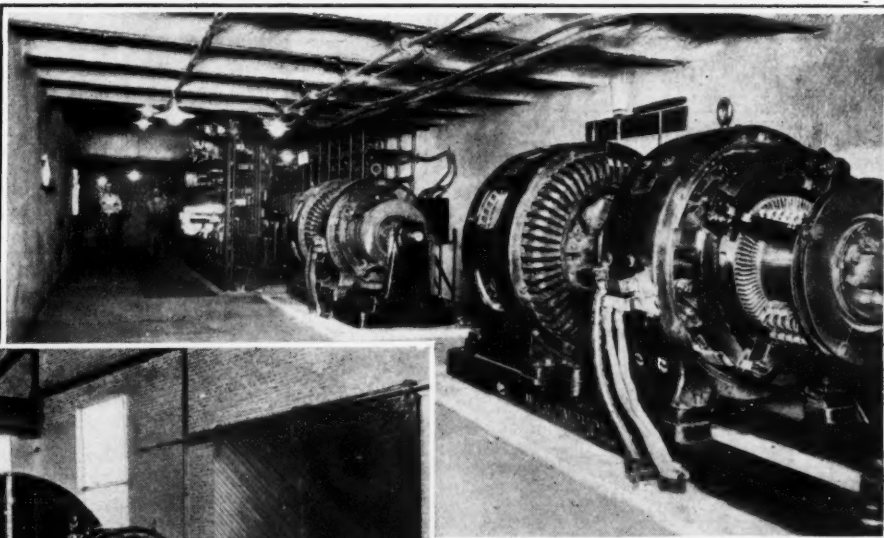
The cars used in this mine are unusually large, having a capacity of 6½ tons each. They have solid steel bodies so that little dust is scattered along the tracks. With the increased use of mechanical loading the size of mine rolling stock, particularly cars, must inevitably increase.

entry, however, instead of running through the shaft so that cars can be caged, passes to one side of it the cars being discharged in a rotary dump. The loaded cars enter the dump without uncoupling, the hitchings being of swivel construction. Two cars are turned over at each operation of this device, their contents sliding into separate weigh-baskets located between the dump and the shaft. By dumping a single car at the start of a run, and two at each dump thereafter, and by emptying the weigh-baskets into the skips after each has received and separately weighed the contents of two pit cars, there is an even feed of two pit-car loads of coal to each skip as it comes to the bottom.

Both shafts are concrete-lined. The main bottom is supported by concrete walls and I-beams for a short distance on either side of the dump. The haulageways and aircourses are driven so as to leave a coal roof, which stands without timbering except in occasional disturbed places. All haulageways and aircourses are rock-dusted as a precaution against explosions. Closed lights only are used in the mine.

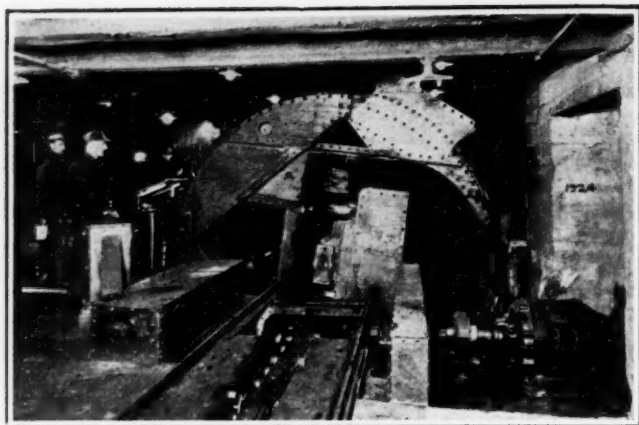
#### An Underground Substation

Most stationary motors at this plant are operated on alternating current. Direct current however drives portable underground machinery such as locomotives and coal loaders.



#### Main Motor-Generator

This machine supplies current for operation of the main hoist. It is driven by an induction motor. The flywheel, which is boxed in for safety, weighs 45 tons.



**Dumping Coal 13 Tons at a Time**

It is unnecessary to uncouple the cars of a trip in order to pass them through this dump as the hitchings swivel. Although two cars are discharged simultaneously the contents of each is separately weighed. Slate cars are sent to the auxiliary shaft where they are hoisted in self-dumping overturning cages.

Great care was taken in the design of the rotary dump, weigh-baskets and skips to avoid rough handling of the coal. It was the aim to make each movement of this material a slide unchecked by any abrupt stops.

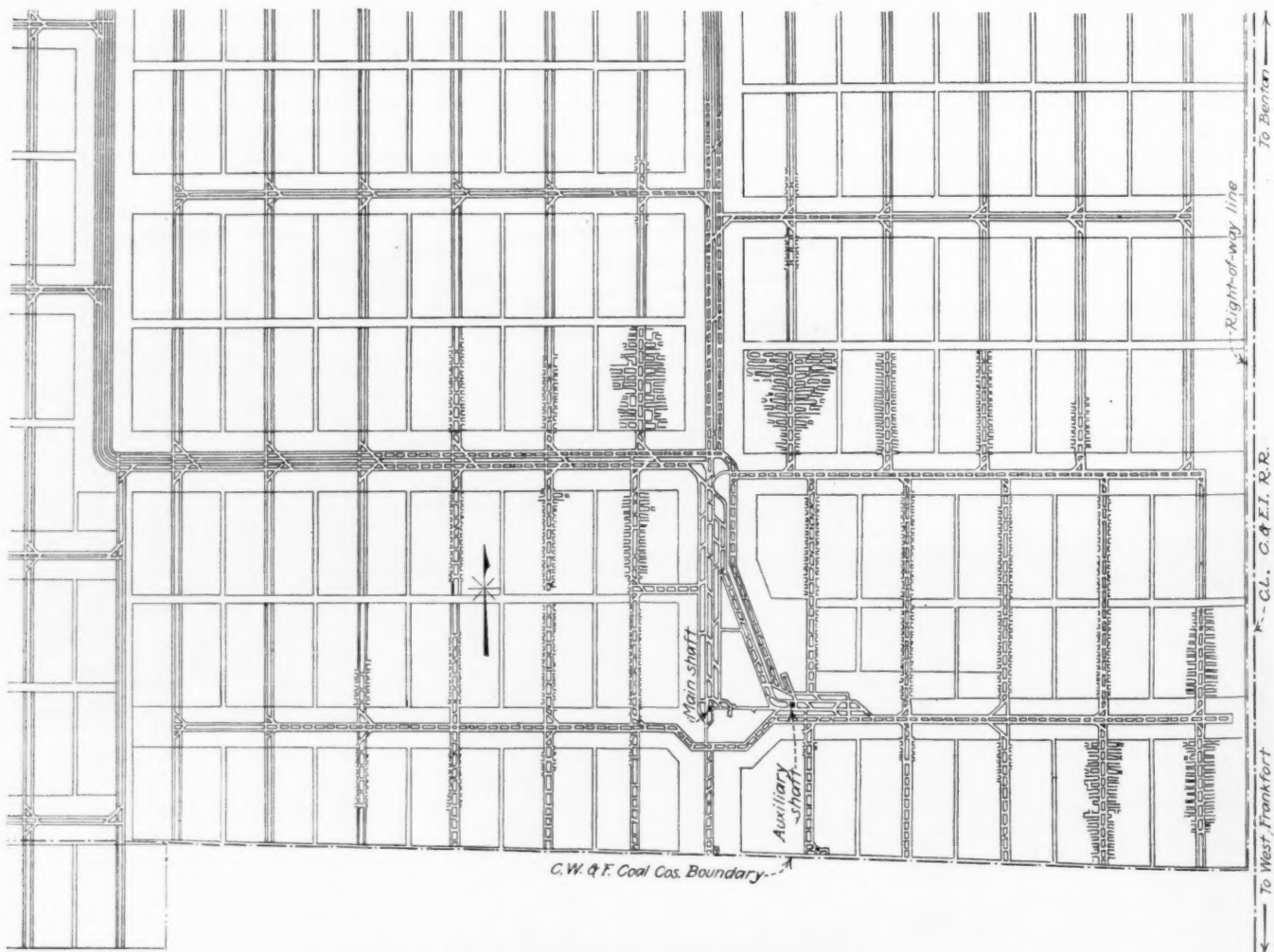
This mine is completely electrified, energy for its operation being purchased from a large public-utility company serving the district. Current is delivered to the mine substation at 33,000 volts, 3 phase, 60 cycles. The substation equipment consists of three 1,667 kva.

and three 500-kva. oil-cooled single-phase transformers representing a total capacity of 6,500 kva. Secondary voltage at the substation is 2,300 and current at this potential is transmitted through underground conduit to the switching room. From this switching room, which is in the auxiliary hoist building, radiate the various circuits supplying current to the several substations located both on the surface and underground. With the exception of the 33,000-volt incoming circuit there is no exposed wiring in or about the surface plant.

#### UNIT DRIVES EMPLOYED

All motors above ground, except those driving hoists and fans, are of the 220-volt, 3-phase, 60-cycle, induction type, and unit drive has been adopted throughout. Stationary motors below ground are also of the 220-volt, 3-phase, 60-cycle, induction type. Underground motors driving coal cutters, coal-loading machines, drills, pumps, fans, snubbers, compressors, etc., use 250-volt direct current, supplied from an underground substation which at present contains three 50-kva. single-phase, 60-cycle, 2,300-220 volt oil-cooled transformers and three 300-kva., 1,200-r.p.m., synchronous motor-generator sets operating from 2,300 to 275 volts.

The maximum 5-minute power demand, when producing about 6,000 tons per day has been 1,400 kw., with a monthly consumption, based on 24 working days, of approximately 430,000 kw.-hr. It is estimated that the maximum demand when producing 12,000 tons per day



#### New Orient Is Well Developed Already, Though But a Youthful Mine

Both shafts are sunk near the southern end of the property. This was done because of the contour of the surface and

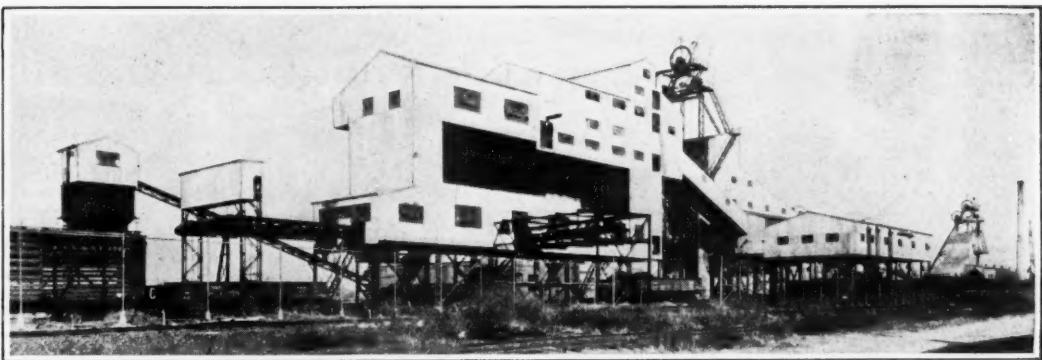
the proximity of this location to both railroad connections and labor supply, as the town of West Frankfort adjoins the prop-

erty on the south. Main headings are driven quadruple while other passages of a similar nature are double.



Main Tipple

Also rescreener plant. The large sizes are loaded at the tipple and the undersize goes to the rescreener.



will be 2,500 kw. and that the monthly consumption, at full running time, will be about 800,000 kw.-hr.

One of the most interesting problems encountered in the building of this mine was the provision of hoisting equipment capable of handling the large contemplated output. With the normal calculated 8-hr. production capacity of 12,000 tons and a vertical hoisting distance of 607 ft., it was necessary for the engineers to work out machinery for heavier duty than had ever before been met by this kind of apparatus.

BIG HOIST INSTALLED

The hoist installed employs the Ilgner system of equalization with a modification of the Ward-Leonard system of control. Details were based upon the specifications and designs of the company's engineers. The electrical portions of the hoist were built by the Westinghouse Electric & Manufacturing Co. in co-operation with the Nordberg Manufacturing Co. which furnished the mechanical portions. It employs a cylindro-conical, step-up type of drum ranging from 10 to 17 ft. in diameter placed between and driven by two 2,000-hp. 75-r.p.m. direct-current motors of the ventilated type.

Located in the same building is a fly-wheel motor-generator set which supplies the direct current for operation of the hoist motors. This consists of a 2,200-hp., 2,200-volt induction motor mounted on a common shaft with and driving two 1,650-kw. 600-volt direct-current generators, one 50-kw. 250-volt direct-current exciter and a 90,000-lb. flywheel. This machine operates at 575 r.p.m. The slip is controlled by a liquid rheostat, the resistance of which is varied by a torque motor. The equipment is designed to maintain practically constant

input for hoisting on the normal cycle, the specifications for which were as in the accompanying table.

Normal Cycle at New Orient

Periods	Seconds
Average rest period.....	9
Acceleration .....	5
Full speed running.....	6
Retardation before entering dump horns .....	3
Retardation through dump horns .....	3
Total Cycle .....	26

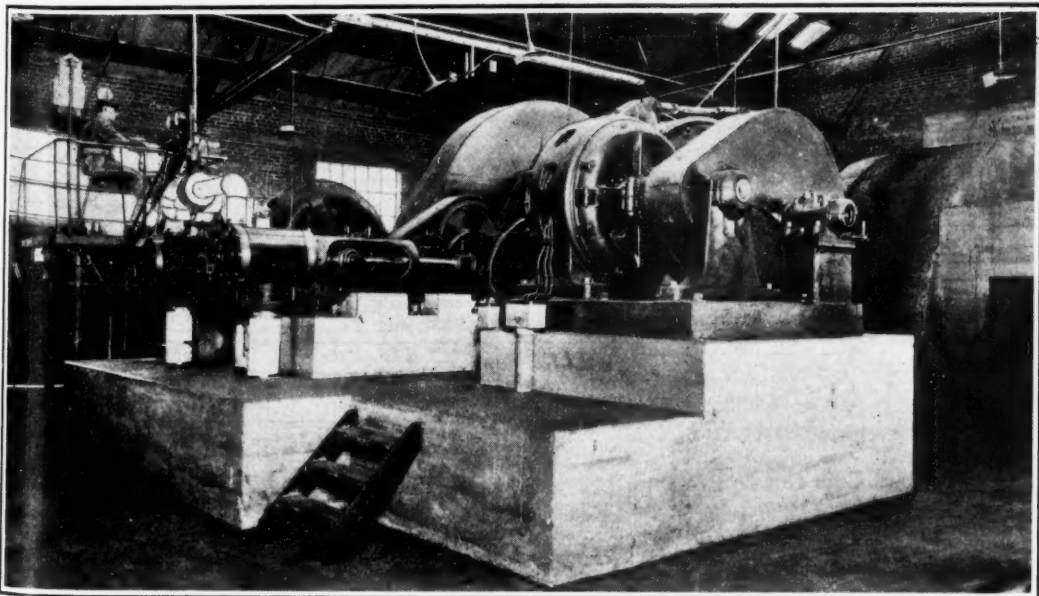
For cooling the hoist motors 30,000 cu.ft. of washed air per minute is delivered by a Sirocco No. 60 fan, driven by a 25-hp. induction motor running at 575 r.p.m.

The big hoist has been in operation only a few months and has not yet been driven at full rated capacity for more than short periods. It has operated smoothly and satisfactorily, however, and when a steady run of coal was available has handled big tonnages with such ease as to demonstrate that it will be able to meet all expectations when the mine is fully manned.

PROVIDES FOR EMERGENCY

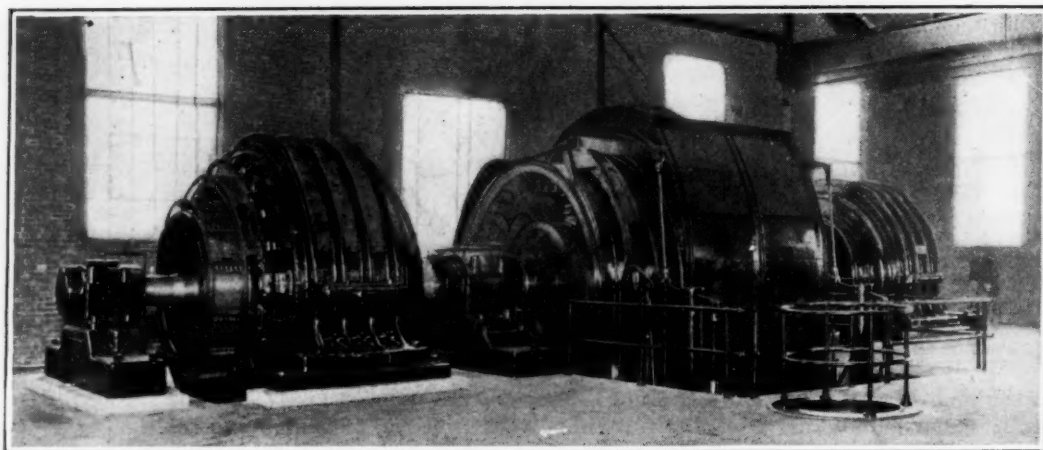
The auxiliary hoist house contains a geared hoist driven by a 200-hp. induction motor. This machine is provided also for special emergency occasions with a 400-hp. induction motor and a small pair of steam engines. A 200-kw., synchronous motor-generator set operating at 2,300 to 275 volts supplies direct current for night and idle-day operation of the mine. The hoistroom also contains the mine ventilating fan—a Jeffrey 12x5-ft. machine driven by a 300-hp., 2,200-volt induction motor, and provided with an 18x18-in. steam-engine drive for emergency service.

The auxiliary-shaft cages are of the overturning self-



Auxiliary Hoist

This machine is uncommonly well provided with driving power being fitted with two motors and a steam engine. Under normal conditions a 200-hp. motor drives this hoist and handles men and material in the auxiliary shaft. If greater speed is required as in hoisting coal, a 400-hp. motor is used. In case of power failure the steam engine is pressed into service to drive this machine. Extreme reliability of operation is thus assured.



### Main Hoist

Probably the most powerful electric mine hoist in the world. A 2,000-hp. direct-current motor is placed upon either end of the hoist drum shaft, the two operating as a single machine. This hoist has not yet been driven at rated capacity except for short periods, but its behavior upon these occasions confirms the belief that when the mine is at full production all expectations will be justified.

dumping type, to permit the hoisting of rock, and occasionally of coal, in the solid-end mine cars. The auxiliary tippie has a rock chute and is connected by belt conveyor with the main tippie so that any coal hoisted in the auxiliary shaft may be taken to the head of the screens in the main tippie. This conveyor is also utilized for transferring to the same point any coal that may need to be screened after being reclaimed from ground storage.

The main tippie is equipped with two shaker screen units, each with a capacity of well over 6,000 tons per day. These shakers feed the oversizes to picking tables and loading booms and the screenings to a chute from which the undersizes may be either loaded onto railroad cars or conveyed to a rescreening plant for further subdivision. Both tippie and rescreener are of thoroughly fireproof construction, electrically operated, and the arrangement of screens is such that the sizing can be arranged to meet all the needs of the market.

### PERMANENT BUILDINGS CONSTRUCTED

Mine buildings other than tipples and rescreener are of simple brick and concrete construction. The main and auxiliary hoist houses, the shop building, the store room and the wash house are of identical design, with tile roofs. The mine offices are located in a 40x50-ft. two-story building of similar construction.

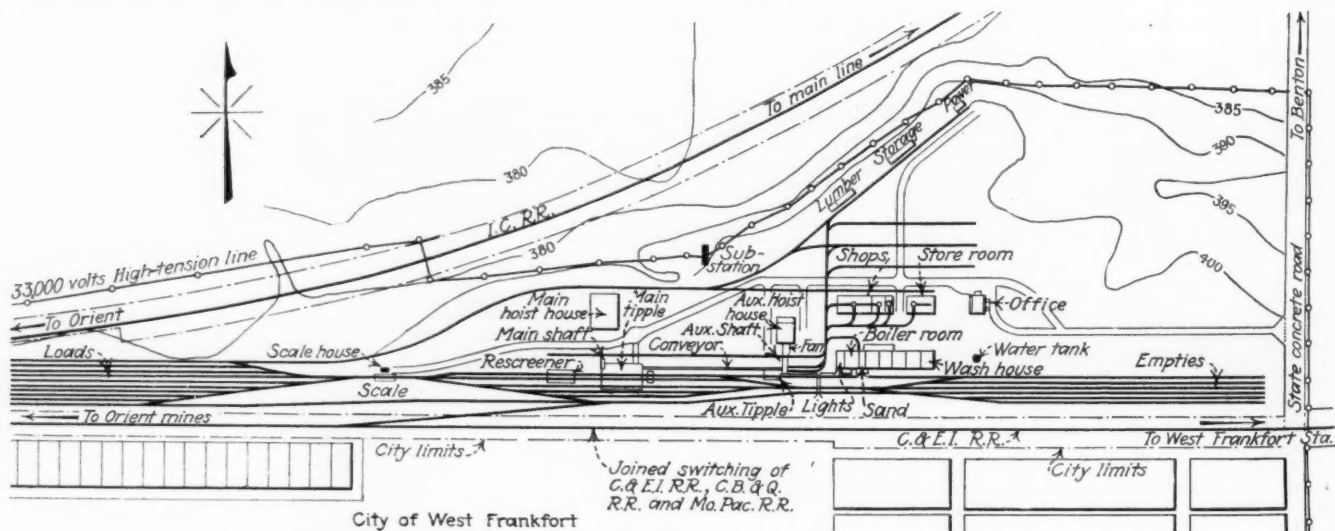
The arrangement of the mine yards is such that the tracks for empty and loaded railroad cars and for railroad switching are entirely separated from those parts of the premises across which men pass in going to and from work and where narrow-gage tracks connect the auxiliary shaft with the shops and material yards. New Orient is served by four railroad systems, each of which reaches the mine yard over its own rails.

### MECHANICAL LOADING TRIED

Quite a little experimental work has been done at New Orient in the mechanical loading of pit cars underground. In fact, until September, 1924, practically all mine development work and production was accomplished by means of loading machines, and the general design of the mine and the plans for its large capacity were greatly influenced by the possibility that it may not be many years before mechanical loading in coal mines will be common practice.

New Orient is the only mine in Illinois that has a wage scale for machine loading. This wage—\$10.07 per day for loading machine operators—was fixed last spring by a joint commission after long negotiation.

"Our experience," says Mr. Harrington, "makes us hopeful that the development of mechanical loaders will eventually permit important advances in coal-mining methods."



### Upper Works and Mine Yard Laid Out to Promote Efficient and Safe Operation

Coal may be shipped from this operation by any one of four railroads. All railroad and yard tracks are kept away from the courses over which men would normally travel in going to and from their work.




## How to Separate Nitrogen from Coal How Nature Devolatilizes Peat Bogs

**Hard Coke Holds Nitrogen Firmly—  
Igneous Action and Depth Devolatilizes  
Coal but Little—Thrust Is Big Factor**

Agriculture needs nitrogen in a form readily available. But nitrogen is inert. It is impossible, probably, to get it into vegetation without bacteria and when vegetation turns to coal it is a difficult matter to get it out of that material. Even single compounds containing only a single amino-group when destroyed by heat only surrender a part of the nitrogen they contain.

At a session of the winter meeting of the American Institute of Mining & Metallurgical Engineers, Feb. 17, Dr. Rose presented a paper by John W. Cobb, Livesay professor of fuel and gas industries, Leeds University, Leeds, England, on the "Nitrogenous Constituents of Coal," in which the author declares that "the compounds occurring in the coke at any stage are not in the least likely to be those present in the original coal. The same difficulty, in a milder form occurs when the method of differential solution is attempted." There is always the preliminary question, almost impossible to answer, as to how far the separation by the use of the solvent has involved some form of decomposition of the original compounds."

He quotes several authorities as showing "that on heating coal the nitrogen is first liberated in the form of ammonia between 310 and 400 deg. C. and that the evolution continues with rising temperature. The large-scale carbonization of coal yields an average distribution of the total nitrogen of the coal as follows: Nitrogen as ammonia, 10 to 20 per cent; nitrogen found in the coke, 40 to 80 per cent. The remainder is found as free nitrogen, cyanogen (and a little of the pyridine bases) in the gas and in the tar."

### SOFT COKE, WEAK PRISON

"Tervet, with confirmatory experiments by Beilby and Anderson and Roberts, showed that the passage of hydrogen over coke at a red heat liberated, as ammonia, a portion of the nitrogen left in the coke. Christie, on the other hand, using hard metallurgical coke, showed that

no reduction of the nitrogen compounds in that coke occurred by the use of steam or hydrogen."

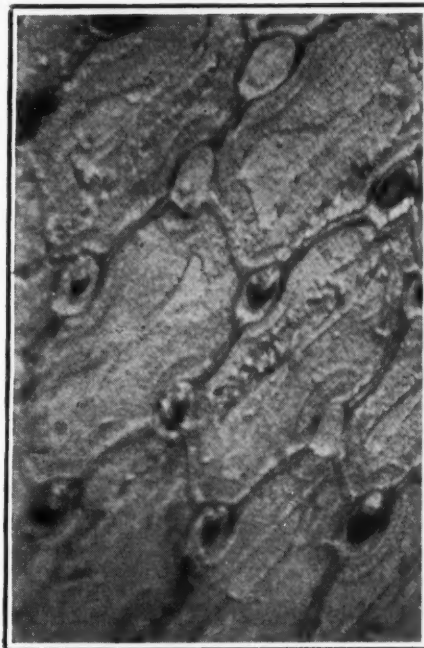
"Monkhouse and the author made detailed experiments on cokes manufactured from the same coal at different temperatures. They found that with a low-temperature coke made at 500 deg. C. heated to 800 deg. C., part of the nitrogen of the coke was liberated as ammonia in an inert current of nitrogen, with a further liberation of nitrogen as ammonia in a current of hydrogen, and the remainder was liberated as ammonia on gasification of the coke with steam. With a hard coke made at 1,100 deg. C., however, the nitrogen was only liberated as ammonia by the gasification of the coke with steam. They concluded that nitrogen compounds occurred in the coal that on distillation yielded: (1) Ammonia directly on heating, (2) compounds that, in the presence of hydrogen, decompose forming ammonia, (3) resistant compounds, the so-called carbon nitrides, which are uninfluenced by hydrogen but which can be decomposed by the use of steam with liberation of ammonia.

### HEAT SEALS NITROGEN

"It appears that as the temperature of the coke is raised the nitrogen remaining in the coke passes into a combination more resistant to the action of heat and to the influence of hydrogen, until in the hard metallurgical coke the only method of liberating the nitrogen is by the use of steam with a consequent breaking up of the carbon-and-nitrogen containing molecule.

"How far the original coal contains nitrogen in these different forms and how far they are formed subsequently on heating are at present unknown, but preliminary experiments by Monkhouse and the author on the distillation of glycooll showed that, with such a compound, containing a single amino-group, the whole of the nitrogen was not obtained as ammonia but a portion remained in the residue.

"From the work of Wheeler, Bone



**Magnification of Anthraxylon**

One of Homer G. Turner's remarkable photographs of coal presented at the A.I.M.E.'s Winter Meeting. Mr. Turner is assistant professor of geology at Lehigh University, Bethlehem, Pa. He calls attention to the delicate dumbbell-shaped membrane within cells and the elliptic markings surrounding small knots along cell walls. Magnified 1,000 diameters.

and others, on the action of solvents on coal, nitrogen appears to be an intrinsic part of most of the compounds in coal; no preferential separation of the nitrogen compounds is obtained."

S. W. Parr, professor of applied chemistry, University of Illinois, Urbana, Ill., presented his paper on coal and oxygen with charts showing the formation of different gases at various temperatures, continued over long periods of time. Evidently the action is continuous. The evolution of gas does not proceed briskly for a while and then discontinue, as some might think. Dr. Parr said he had not tried the effect of mixing fresh with oxidized coals. One of those present said that the Northern Pacific R.R. made it a practice not to store lignite more than three weeks because of its susceptibility to spontaneous combustion.

Arno C. Fieldner, superintendent and supervising chemist in charge of the Pittsburgh Experimental Station, U. S. Bureau of Mines, Pittsburgh, Pa., read a paper entitled "A Modern View of the Chemistry of Coals of Different Ranks as Agglomerates." He said that to analyze coal into its constituent elements, carbon, oxygen, hydrogen, nitrogen, sulphur, phosphorus and so on, was like making an analysis of a book by counting the e's, the f's and the g's, etc., and recording the result. Not much

edification would result from knowing that the "Origin of Species," for instance, contains 42,316 e's more or less. Briefly he summarized what we know about the chemistry of decay and what we have learned by distillation and solution of coal.

J. Brian Eby, assistant geologist U. S. Geological Survey, Washington, D. C., showed on a screen the coal beds and their sections and the degrees of metamorphism described in his article on the "Contact Metamorphism of Some Colorado Coals." Mr. Tryon read George C. McFarlane's discussion in which he described the occurrence of 17 in. of natural coke adjacent to a diabase dyke 8 to 12 ft. thick. W. T. Thom declared that the metamorphism was probably not due so much to heat carried by radiation as to that conducted by gases and by steam.

David White, senior geologist, U. S. Geological Survey, Washington, D. C., briefed his interesting article on the "Progressive Regional Carbonization of Coal" showing that dykes, sills, laccoliths and batholiths have little to do with the rank of the coal. The coal may actually become of lower rank as the area of igneous intrusion is approached, provided that at the same time the advance leaves further behind the center line of maximum thrust. For heat generated by thrust permeates all the measures subjected to it and causes slowly a chemical and physical change in the measures thus compressed and heated. Where faults and folds occur the thrust is avoided. In consequence, it sometimes happens that the coal near the convulsion

causing the thrust may be less devolatilized than that further away. The effect of faulting and folding in relieving thrust and therefore in preventing the heating of the measures and the devolatilization of the coal is illustrated by the rank of the coals in the Broadtop region of Pennsylvania and the Cahaba and Coosa fields of Alabama, the location of which would cause one to anticipate coals of extremely high rank, perhaps even anthracite.

Interesting is his comment on the law of Hilt, which states that the coal of lower seams is of higher carbon content than those of upper seams. This he says is probably not in any large degree due to the greater pressure resulting from depth but to the fact that measures compressed by thrust can readily yield when near the surface but must more often bear the strain when covered by many hundreds or thousands of feet of strata which prevent the measures from folding and faulting and thus eluding the compressive stress.

Mr. White also showed that the alga boghead coals (laid down in the sea), cannel and humic coals had in their early stages as peat and lignite, percentages of carbon, hydrogen and oxygen greatly varying from each other. As these coals progressed in rank and became in turn sub-bituminous and bituminous coals the difference became less marked until the semi-bituminous stage was reached. Then and thereafter all became alike. In the anthracite and graphitic stages alga bogheads, cannel and humic coals have the same

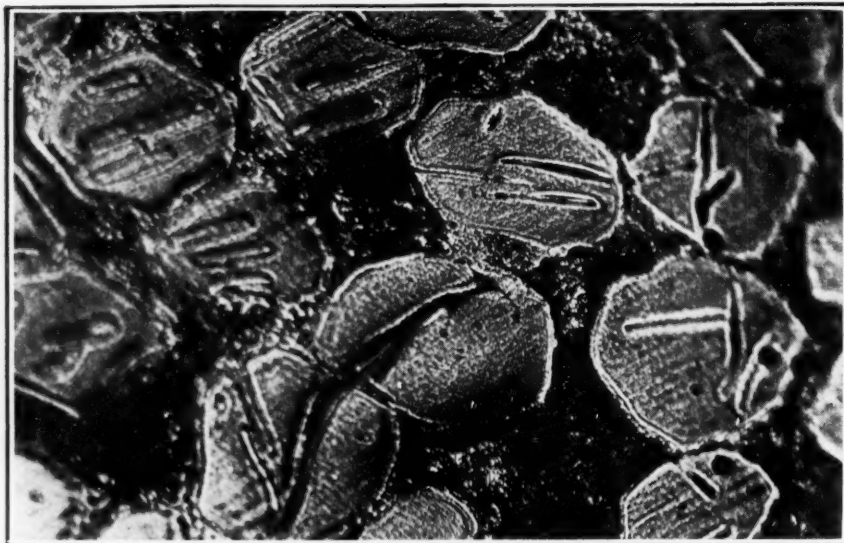
carbon, oxygen and hydrogen contents.

W. T. Thom, Jr., geologist in charge of geology of fuels, U. S. Geological Survey, Washington, D. C., delivered an address on "Moisture as a Component of Volatile Matter in Coal" declaring that the coals could not be properly classified by their volatile matter but could be ranked correctly if the moisture was regarded as a part of the volatile constituent. It was remarked by Mr. Fieldner that the moisture content "as received" was a most uncertain factor, depending on the moisture in the working place, the method of taking the sample, the heat of the sun and many variants. No one who had passed a car of Sheridan, Wyo., coal and heard it crackling could question the variability of the moisture content. Much depended on the dryness or wetness of the mine from which the coal came.

S. W. Parr said that some lignites had only 2 per cent moisture. C. A. Seyler advocated the pure coal basis of estimation, omitting the moisture altogether. R. D. Hall said that it might be well to saturate all coal samples for analysis with moisture and dry them in air of a given temperature and moisture content thus eliminating the adventitious conditions existing either in the mine or between the mine and laboratory from the final result.

In the course of the discussions George S. Rice declared that he was unable to coincide with F. S. Sinnatt, assistant director, Fuel Research Board, East Greenwich, England, in belittling or ignoring the importance of pyrite for the pyrite in the Michigan iron dumps causes them to burn spontaneously, though no coal is present.

H. L. Rose confirmed the readiness of coal to ignite at low temperatures, as stated by Mr. Sinnatt in his article to which lengthy reference was made in *Coal Age* last week on page 366. He had found coal to fire at 110 deg. C. in a steam-heated oven. The coal had passed through a  $\frac{1}{8}$ -in. screen. S. W. Parr said that when hygroscopic water goes out, oxygen goes in. He said he could not see how the coal could be started to burn except as Mr. Sinnatt has done it with a bunsen burner or a match. Of course, coal could be heated by a hot bulk head, hot pipes or the sun, but how in the mine could the required temperature be attained? Mr. Rice said that ropes or brakes could produce such a temperature.



Large Spore Exines from Dull-Coal Layers

This, Mr. Turner says, is a magnification to 300 diameters of Pennsylvania anthracite. He declares the markings on the spores are probably lines of dehiscence, which is the word botanists use to describe the gaping or opening of capsules and of the cells of anthers for the discharge of their contents.





## News Of the Industry



### Avoidance of Force in Attempt to Revise Wage Agreement Is Hope Expressed in Government Circles

Best Course for Operators if Persuasion Fails Believed to Be Reliance on  
Time—Economic Forces Reveal Unfeasibility of Present Scale—  
Precedent Favors Union in Event of Strike

By Paul Wooton

Washington Correspondent of Coal Age

As the bituminous coal operators in the union fields are formulating their policies looking to wage revision the hope is expressed in government circles that no resort will be had to force in the attempt to effect a reduction. It is held to be obviously the best course for the operators to wait if they cannot obtain wage concessions by persuasion. Time will be on their side. The operators should be willing, it is contended, to adopt Fabian tactics and avoid fighting. It would be better to let the market demonstrate further the impossibility of the present scale.

#### Economic Forces Felt

Economic forces already have accomplished more toward convincing the United Mine Workers of the need of an adjustment than did the direct assault in 1922. A demand for a reduction then precipitated a great strike and gave the United Mine Workers another chance to demonstrate its extraordinary qualities as a fighting organization. Some contend, of course, that the mine workers would have lost in 1922 had they not been helped out by the railroad shopmen and by the administration, but that is not the point. Either through luck or by sheer staying power the organization always has won in a contest of force. The whole tradition and the whole discipline of the organization fit in with the idea of striking.

If the operators now force a break it is quite clear that it will arouse the war spirit of the mine workers. It would halt abruptly the drift away from the union under the pressure of unemployment. A suspension is the one thing that would save Mr. Lewis' position. Any attempt to force the issue would arouse the fighting spirit of the men in some of the non-union districts. Sight must not be lost of the 1922 developments in Connellsville and Somerset.

A strike might bolster up prices temporarily and permit union operators to share in the market for a time, but its permanent effect would be to make in

vain the sacrifices of the first year of the Jacksonville agreement. On the other hand, if the operators avoid a break and use persuasion only, or sit tight, the Jacksonville agreement will crumble of its own weight.

Signs are multiplying, even among the union men in the borderland districts, which indicate that the agreement is unworkable. The same week which brought official denial from the International president of any cuts in the Fairmont district brought newspaper accounts from central Pennsylvania to the effect that union men are mining 2,400 lb. for the nominal price applying to 2,000 lb. and are putting in additional time for which they receive no pay. A British observer who recently toured our Eastern districts, on returning to his home, reported that "a coach and four can be driven through the agreement." This is a development of high significance. Heretofore the union has been successful in keeping its members in line and requiring full compliance with agreements. These deviations could come about only under conditions that show clearly to both parties to the agreement that it is working out to the advantage of neither.

#### Union Scale Too High

The discussions among union operators indicate that no one knows the exact level of non-union wages. Apparently they have dropped to the 1917 levels. The union scale for day workers is indefensibly high if based on increases in the cost of living as compared with the prewar period. Tonnage rates are not as badly out of line. The Bureau of Labor Statistics index shows living costs to be 75 per cent over 1913. Tonnage rates have been increased 75 or 80 per cent in the union fields, but the day rates have been increased from 160 per cent to 190 per cent. As was shown by the report of the Harding Coal Commission, they have gone so high that daymen earn more than tonnage men, considering the steadier work they usually get. The argument for taking off the last

#### Cleveland Conference Postponed to March 17

The much-discussed Cleveland conference to consider the Jacksonville agreement and what ought to be done about it was postponed at the last minute last week. The original date was Friday, March 6. It is now set for March 17. A. A. Augustus, president of the Cambridge Collieries Co., of Cleveland, who sent out the invitation to the scale committees of western Pennsylvania, Ohio, Indiana and Illinois, comprising the Central Competitive Field Jacksonville signatories, changed the date of the proposed conference after he had noted the refusal of Illinois to attend and the doubtful acceptance of Indiana, a state that believes there should be no such conference but which agreed to send delegates as a protective measure.

No definite reason for the postponement was assigned. The objection to the meeting was so pronounced throughout the western half of the Central Competitive Field, however, that it appeared that if the conference was held on March 6 there would surely be no concert of opinion among the four states. This was exactly the result of a previous meeting called in Pittsburgh more than a month ago. An effort to frame a more harmonious basis for a conference will be made before March 17.

advance in day rates seems clear to everyone except the United Mine Workers. There also is much to be said as to the disparity in wages for comparable work in other industries.

The Pittsburgh & West Virginia Ry. requests bids for railroad fuel coal which it will require over periods of one and two years, beginning April 1, 1925, and terminating, respectively, on March 31, 1926, and March 31, 1927, being approximately 50,000 tons of 3-in. and 15,000 tons of slack for the yearly period, and 100,000 tons of 3-in. and 30,000 tons of slack for the two-year period, in accordance with specifications on file in the office of the purchasing agent. Bids must be submitted and addressed to the purchasing agent, R. L. Robinson, R.F.D. No. 8, Crafton, Pa., and be on file in his office by 12 o'clock noon of March 26, 1925. After that time bids will not be considered.

## Who Purloined Letter of Mine Bureau in Utah?

The loud charge of "bureaucracy" lodged against the Bureau of Mines because of its attempt to arrange a governors' conference on mine safety was the result of a letter which strayed somehow into print in Salt Lake City, Utah. How did that letter break into the public eye? Chairman McShane of the Utah Industrial Commission is wondering. He says the letter—written by Dr. T. T. Read, of the bureau, to B. W. Dyer, district engineer for the bureau in Utah—just naturally disappeared from his desk and the next thing he knew it was in print and causing a ruction. Mr. McShane does not charge any specific person with taking the letter, but it disappeared—he wishes he knew how.

It was in this letter on the proposed governors' conference on mine safety that Dr. Read said: "I have not suggested that representatives of coal-producing companies be included as delegates to the conference because it is believed their inclusion as such would lead to protracted discussion that probably would result in failure to take effective action." Immediately upon the publication of the letter charges were made in Salt Lake City by David H. Madsen, of the Utah Fish and Game Commission, and Attorney-General Harvey H. Cluff that the federal government was trying to dominate state activities. Harry L. Gandy, executive secretary of the National Coal Association, made the same charge against the Bureau of Mines in a speech a few days later in Cleveland, Ohio.

Since then the coal industry in Utah and in some other sections has been in somewhat of a ferment over the danger of too much federal control over mines through the zeal of the Bureau of Mines to encourage mine safety precautions. A great deal of talk has been rife in complaint against the rigidity of the new Utah mine safety code adopted April 8, 1924, after the Castle-gate disaster of the month before.

### Too Much State Control

Many Utah operators are of the opinion that the state is rule-ridden and that the Utah Industrial Commission, which led in the preparation of the Utah code, was dominated by the Bureau of Mines and lent itself to a bureau move for too much state control—a move which they believe is spreading. They contend that the operators of the state are as keen to make their mines safe as anybody in the Bureau of Mines could possibly be, and that the blanket safety code now in effect compels practices in mines that have absolutely no need of them, in order to make effective those practices in dangerous mines.

The Industrial Commission, on its part, feels that somebody is trying to make it the butt of the situation and that a strong effort is being made to get the personnel of the commission changed and especially to get B. W. Dyer, district engineer for the bureau in Salt Lake City, pried loose from his contact with Utah mines. "This is because he is too good a man and will

### Vegetable Garden, Juniata (Pa.) Mine

At best houses are not places of beauty, however constructed. It is nature that gives them picturesqueness. The H. C. Frick Coke Co. has many villages with houses made beautiful by the diligent husbandry of the tenants.



wink at no infractions of the safety code," said a high Utah state official.

One result of the situation is that the co-operative arrangement which the State of Utah and the Bureau of Mines had for joint mine inspection has been cancelled. A plan is now on foot for re-establishing this joint arrangement on some new basis.

### L. & N. Is 75 Years Old

The Louisville & Nashville R.R., which has gone a long way in developing the Kentucky, Tennessee and Alabama coal fields, on March 5 was seventy-five years of age. The road was started to operate between Louisville and Nashville, Tenn., the then two largest cities in the respective states, and later reached Cincinnati and most of the South. The L. & N. always has been a success, and is one of the few big trunk lines that have never been in receivership.

### Congress Prefers Coal to Oil for Heating Capitol

Congress has decided that coal is preferable to oil for heating the Capitol, at Washington. This decision was recorded Feb. 28, when the Senate followed the House in passing the second deficiency bill for 1925, appropriating \$251,800 for the installation of a modern stoker equipment and other improvements in the Capitol power plant.

David Lynn, architect of the Capitol, and Prof. S. H. Woodbridge, consulting engineer, appeared before the House Appropriations Committee and recommended modernization of the coal-burning plant rather than the substitution of oil. "The present price of oil and its probable future cost" are among the reasons advanced in the testimony before the House Committee as insurmountable barriers to consideration of oil for fuel purposes.

Evidence continues to pile up concerning the economy of coal. Regret is expressed by several government officials that funds were not obtained a year ago for the modernization of the coal plant in the old Land Office Building, which would have resulted in a saving of several thousand dollars a year as compared with the cost of operating the oil-burning plant in that building.

### Indiana Has Three More Little Gas Explosions

The Indiana bituminous field during the week of March 1 was visited by a number of explosions of gas in the mines. These followed the explosion at Sullivan, Ind., on Feb. 20.

Following an explosion in the Atlas No. 3 mine, owned by the Pike County Coal Co., the night of March 3, in which five men narrowly escaped instant death, falling slate in the mine March 4 seriously injured William Board, mine electrician, and John Webb, a miner, who had entered the mine to clear away the debris. Three others were brought to the top overcome with gas. The explosion resulted when 60 tamped shots were electrically discharged at one time and no shot-firers were in the mine at the time of the explosion.

An investigation was held at Clinton, Ind., March 6 to determine the cause of the explosion at the Black Betty or Zimmerman mine at New Goshen March 5. One man narrowly escaped serious injury and several thousand dollars' worth of damage was done. Robert Carver, of New Goshen, a shotfirer was coming out of the mine on the cage and was about 20 ft. from the top when the explosion occurred. The explosion is said to have been caused by a windy shot.

Deonino Destesano, of Jacksonville, Ind., was killed instantly and James Fasseppi of Blanford was injured in an explosion Wednesday night at Shirkie mine, No. 1, operated at Shirkieville by the Shirkie Coal Co. The explosion is said to have been the result of a windy shot.

A windy shot in the Peabody Coal Co.'s mine at Riverton, Ill., fired the night of March 5, caused trouble. The shotfirer was struck on the head by some flying object but was not dangerously hurt. The next morning the mine had been so imperfectly cleared of gas that a good many men were made sick and the whole crew quit work for the day. Seven sick men spent two days in the hospital.

A contract for the construction of a garage for the government fuel yards, in Washington, D. C., has been awarded to the Virginia Engineering Co., Inc., of Newport News, Va. The amount of the bid was \$144,000. The company is to complete the garage in seven months. The garage is to house the trucks of the fuel yard and is to be a model of construction and convenience.



Northwestern Coal Rates  
Once More in Turmoil

It now appears that the Interstate Commerce Commission has filled its hands again with a new burst of business involving the whole rate structure on coal going into and through the Northwest. The Feb. 27 report of two examiners favoring reduction of rates on coal from Eastern producing fields to the lower lake dumping docks has started a mighty movement for reopening of the old Lake dock cases and without doubt will bring in new petitions for rate changes both from Midwest fields to the Northwest and from the docks inland through the Northwest. So objections from the Midwest are filed and the long standing turmoil over Northwest rates is started into action again.

The examiners on Feb. 27 proposed reducing rates from certain Ohio districts to lower lake ports to \$1.15, from the Pittsburgh district to \$1.45, and from the Clinch Valley, or furthest district of the outer crescent, to \$2.28. This immediately excited the Kentucky shippers, who feel that such rates, if permitted to take effect without change in eastern Kentucky rates to the lakes, will practically cut Kentucky out of the lake business. So traffic associations there are filing objections.

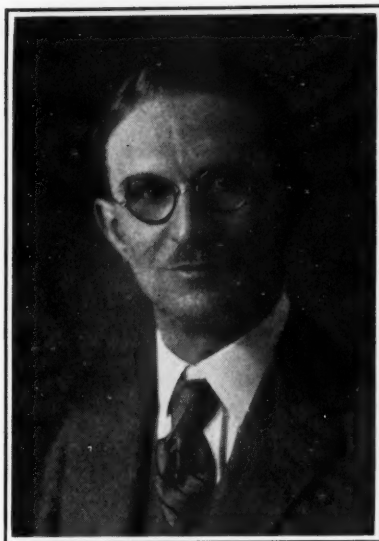
Kentucky feels that the rates proposed would give Pennsylvania and West Virginia an advantage of as much as 83c. a ton. The Hazard field would be 11c. higher than the Kanawha field, and Harlan field 20c. higher.

This revision of rates to the lower lake ports promises to reopen the dock case in extenso, for it involves the entire dock question. The recommendations, if adopted, would assuredly put the dock trade upon its feet in a way that has not been possible for a number of years. If there should be any such reduction in the haul to the lower lake ports, it would seem reasonable that a somewhat similar reduction should follow on the haul from the Head of the Lake docks to the Twin Cities in particular, if not to the interior. While it does not appear to be the theory of the commission to recognize unbroken tonnage as a factor in rate making on coal, yet the possibilities of a continuous haul from the Head of the Lakes to the Twin Cities might receive such consideration.

Increased freight rates on all-rail coal from eastern Kentucky and West Virginia mines will go a long way toward driving this coal from the Twin City market, specialists in all-rail Eastern bituminous assert. The increased rates from these mines to Minneapolis and St. Paul and to various points in Minnesota, South Dakota and Iowa, planned a year ago, will be made effective March 23, according to latest advices received here.

Lake Superior dock operators, on the other hand, declare the revision of rates is a proper step in a move to balance the coal rate structure of the country. They say the existing rates are preferential to all-rail bituminous and against the interests of dock fuel.

The most important change in the rate structure is a 54c. advance, from \$4.86 to \$5.40, from the Kentucky and



Barton R. Shover

Well-known consulting engineer, with offices in the Oliver Building, Pittsburgh, Pa., who has taken over the practice of the late Harry F. Randolph.

Virginia mines to the Twin Cities. The increase applies only to coal coming over the Louisville & Nashville and carriers which connect with it in the east. On the large volume of Eastern coal which reaches the Twin Cities over the Chesapeake & Ohio and the Norfolk & Western the new tariff will be a decrease of 30c. a ton. This tariff is reached through a combination of local rates and those of the originating railroads. The proposed rates in all of the fields are as follows:

District	Old Rate	Relation to Pittsburgh	Proposed Rate	Relation to Pittsburgh
Butler-Mercer	\$1.34	32c. Under	\$1.15	30c. Under
Massillon	1.48	19c. Under	1.15	30c. Under
Middle	1.48	18c. Under	1.30	15c. Under
Freeport	1.51	15c. Under	1.42	3c. Under
Reynoldsville	1.51	15c. Under	1.42	3c. Under
No. 8 Ohio	1.63	3c. Under	1.42	3c. Under
Cambridge	1.63	3c. Under	1.42	3c. Under
Pittsburgh	1.66		1.45	
Hocking	1.63	3c. Under	1.50	5c. Over
Crooksville	1.63	3c. Under	1.50	5c. Over
Altoona	1.81	15c. Over	1.67	22c. Over
Jackson Co.	1.63	3c. Under	1.67	22c. Over
Connellsville	1.72	6c. Over	1.67	22c. Over
Pomeroy	1.63	3c. Under	1.67	22c. Over
Fairmont	1.81	15c. Over	1.75	30c. Over
Kentucky	1.91	25c. Over	1.75	30c. Over
Meyersdale	1.88	22c. Over	1.85	40c. Over
Kenova	1.91	25c. Over	1.85	40c. Over
Kanawha	1.91	25c. Over	1.98	53c. Over
Thacker	1.91	25c. Over	1.98	53c. Over
Big Sandy	1.91	25c. Over	1.98	53c. Over
Cumberland-Piedmont	1.93	27c. Over	1.98	53c. Over
Hazard	1.91	25c. Over	2.09	64c. Over
Pocahontas	2.06	40c. Over	2.09	64c. Over
New River	2.06	40c. Over	2.09	64c. Over
So. Jellico	1.91	25c. Over	2.09	64c. Over
Tug River	2.06	40c. Over	2.09	64c. Over
McRoberts	1.91	25c. Over	2.18	73c. Over
Harlan	1.91	25c. Over	2.18	73c. Over
Clinch Valley, No. 1	1.93	27c. Over	2.18	73c. Over
Stonega	2.06	40c. Over	2.28	83c. Over
Clinch Valley, No. 2	1.93	27c. Over	2.28	83c. Over

Establishing a new record, output of byproduct coke in January totaled 3,406,000 net tons against 3,324,000 tons in May, 1923, the maximum hitherto recorded, according to the Geological Survey. In comparison to the revised figures for December, 1924, when production amounted to 3,267,000 tons, the January output showed an increase of 4.2 per cent of capacity. Of the 75 plants reporting, 68 were active.

Must Pay Market Price for  
Commandeered Coal

Where coal has been confiscated for a public use, the prevailing market price is the "just compensation to which the owner" of the commandeered fuel "is entitled." This principle, enunciated by the U. S. Supreme Court in the New River Collieries Co. case, in which the operator successfully attacked the price-fixing activities of Secretary of the Navy Daniels, was reaffirmed last week in an opinion by Justice McReynolds in Davis vs. George B. Newton Coal Co., Philadelphia.

The cases just decided turned upon actions under the emergency fuel regulation set up by the government at the beginning of the general bituminous strike in the winter of 1919. During January and February of the following year, the Director General of Railroads confiscated 113 cars of bituminous coal moving to the Newton company under contracts of purchase with the producers. The fuel seized was used by the Philadelphia & Reading and the Pennsylvania railroads.

The Director General contended that he was obligated to pay only the prices specified in the contracts between the Newton company and the shippers. The Newton company took the position that it was entitled to the difference between the contract prices and the prevailing market prices at the time of confiscation. This difference, which the Director General declined to pay, approximated \$1.44 per ton. Judgment for the difference between contract and market prices was given the Newton company in the Pennsylvania state courts. Before the federal court, the Director General, James C. Davis, insisted that his actions had been authorized by the Lever law and that his liability did not extend beyond the contract prices.

"From the facts stated," retorts Justice McReynolds, speaking for a unanimous court, "it appears plainly enough that 113 cars of coal belonging to defendant in error were seized by the United States while upon the lines of carriers under their control and thereafter appropriated and used in the operation of such roads. The taking was for a public use. The incantation pronounced at the time is not of controlling importance; our primary concern is with the accomplishment. As announced in United States vs. New River Collieries Co., 262 U. S. 341,343,344, 'where private property is taken for public use, and there is a market price prevailing at the time and place of taking, that price is just compensation' to which the owner is entitled. Also, 'the ascertainment of compensation is a judicial function, and no power exists in any other department of the government to declare what the compensation shall be or to prescribe any binding rule in that regard.'"

U. S. Fuel Imports in January

(In Gross Tons)

	Jan., 1924	Jan., 1925
Anthracite	8,228	12,234
Bituminous	43,751	39,598
From:		
United Kingdom	3,675	1,516
Canada	37,854	38,077
Other countries	2,222	5
Coke	7,979	6,266

### **M.K.T. Turns 24 Engines From Oil to Coal**

The advance in the price of fuel oil since Jan. 1 and the relatively low price of coal has resulted in the Missouri, Kansas & Texas R.R. resuming the use of coal as a fuel on its Sedalia division. Twenty-four oil-burning engines are to be converted into coal burners. About 160 miles of main-line track is affected. The Sedalia division embraces the territory between New Franklin, Mo., and Parsons, Kan.

Recent contracts for fuel oil assure an adequate supply for the major lines during the next two years.

### **Coal Resumes Long Hauls on Mississippi River**

Long hauls on the Mississippi River evidently are resuming in the coal traffic. The steam towboat C. F. Richardson, of the West Kentucky Coal Co., came into Cairo, Ill., last week with thirty barges of coal from New Orleans, and picked up five barges of grain which were going South. The Richardson is the largest towing unit on the Ohio River today, and operates from Paducah to Memphis and Southern points, smaller boats bringing barges from the company's loading station at Caseyville, Ky., near Sturgis and Wheatcroft, and making up the big tows in the larger river at Paducah.

It is interesting to note that the West Kentucky Coal Co. is making this long haul. Some years ago the company took heavy losses in the lower Mississippi River, one of its steamers losing a big tow when a tropical storm almost sunk the steamer with the tow. The company for a time became lukewarm on the long haul to New Orleans and abandoned some of its Southern business for a time. There is a good market at New Orleans, however, and the long haul by water can be made profitably barring accidents.

Storm losses in the lower Mississippi were largely responsible for the abandonment of the Pittsburgh-to-New Orleans river haul by the old Pittsburgh combine, which sold most of its boats over the past ten years and abandoned the long-haul business. On one occasion the Sprague, largest of all towboats that ever operated on the Ohio, lost about fifty barges and coal boats when a tropical storm caught her in the lower Mississippi, where the land is low and level, and the wind gets up a high velocity.

A few big losses of that kind result in killing off profits on a very large tonnage. However, the days of the old style, knocked together coal boats are gone, and they have been replaced with barges of a more substantial type.

Expenses for the operation and maintenance of the Alaska R.R. during the next fiscal year will be \$2,605,000, it is estimated. The revenues will be \$1,000,000. The deficit for the current fiscal year will be \$1,500,000.

### **Coal River Row Not Settled; Meeting Postponed**

A conference to discuss wage controversies between the Coal River Collieries Co., owned by the Brotherhood of Railway Engineers, and the United Mine Workers, opened at Charleston, W. Va., March 4, but was adjourned until a later date, due to the absence of J. T. Dunnigan, president of the Coal River company.

The convention of the American Federation of Labor at El Paso appointed a committee composed of Frank Morrison, Ryan (president car repairman's union) and Noonan (president electricians' union) to meet with representatives of both sides and try to effect a settlement. This meeting took place in Washington, Feb. 18, where the United Mine Workers group consisted of President Lewis, Vice-President Murray, Secretary Kennedy and Percy Tetlow, president of district 17. The Coal River group consisted of Stone, Dunnigan, G. G. Hoffman, sales manager; Charles Glass, a director, and Z. Suttan, payroll auditor.

At the suggestion of the A. F. of L. committee and with the approval of both parties to the controversy a subcommittee was authorized by Stone and Lewis to thrash out the matter and try to come to an agreement and report to the A. F. of L. Those on the subcommittee are Thompson (new secretary of district 17) and Percy Tetlow, for the United Mine Workers, and Dunnigan and Hoffman for the Coal River company. This subcommittee was to have met last Wednesday in Charleston, but with Dunnigan unable to be present, nothing could be done. It is hoped that another meeting will be held soon and an agreement arranged.

### **Bill Repealing Hard-Coal Tax Recommended "for Study"**

The Huber bill repealing the anthracite tax law, presented in the Pennsylvania Legislature, has been reported out affirmatively by the House Mines Committee and is now back in the Ways and Means Committee. The members of the Mines Committee favor the passage of the bill and the anthracite county members of the Legislature also are in favor of the measure. However, no means has been provided for making up the \$6,000,000 or more a year the tax yields to the State Treasury, and as the Ways and Means Committee must attend to the revenue that the Appropriations Committee intends appropriating, the bill was recommended "for study."

The motion to recommit was made by Representative Sterling, of Philadelphia. Representative Conrad Miller, Luzerne, opposed the motion in behalf of the hard-coal district members, who believe that the bill has disappeared for the session.

Two bills amending the appropriation act of 1923 have been introduced by Representative Joseph B. Henderson, of Fayette County. The bills are for the purpose of making up a shortage that existed when Governor Pinchot reduced the Department of Mines appropriation two years ago.

### **Alberta Operators to End Union Agreement**

The Western Canada Coal Operators Association at a meeting at Calgary on March 4 decided to give notice on March 31 to the United Mine Workers that their present agreement would be terminated on Sept. 30. Since the resumption of operations in October the coal-mining industry of Alberta has been badly hit, many of the mines working only one or two days a week. It is stated that the present cost of production in union mines is largely responsible for the great falling off in business.

One provides for \$552,500 for the salaries for coal-mine inspectors instead of the \$492,700 appropriated in 1923. This bill, if passed, would make possible the payment in full of the salaries of the inspectors who had to serve a month without pay during the past biennium. The other bill transfers \$4,000 appropriated to the Department of Mines in 1923 for the payment of salaries of the Anthracite Mine Inspectors Examining Board to the Department of Public Instruction, which directs the examining board.

Four of the Heffran bills, relating to the health and safety of miners, have been reported out by the House Mines Committee with affirmative recommendations during the past week. These bills relate specifically to the use of storage-battery locomotives in gaseous mines if it is practicable to inclose all electrical parts in flame- and explosive-proof casings, to the requirement of five years' experience for mine foremen in bituminous mines, to definitions relative to damp conditions in mines and the use of electric lamps and also to the exchange of maps where one mine is working under another and both are owned by different operators.

### **N. C. A. Meeting to Be Held In Chicago, June 17-19**

The eighth annual meeting of the National Coal Association will be held at the Edgewater Beach Hotel, Chicago, June 17, 18 and 19, according to an announcement Feb. 25, by Ezra Van Horn, of Cleveland, chairman of the special committee in charge of the program. Reports from all fields indicate there will be a large attendance.

Meetings will be confined to forenoon sessions, commencing at 10:30 o'clock, June 17, and at 9 o'clock on the 18th and 19th, with adjournment at 1 o'clock. A banquet will be the feature on Wednesday evening, June 18. Philip Gee, of the British Operators' Association, probably will be the only speaker from outside the bituminous industry of this country. Several hourly periods will be devoted to the general discussion of questions of vital interest to the industry, introduced in each instance by an opening statement of ten minutes by an operator especially well qualified to speak on the subject to be discussed.



### A. M. C. Coal Sessions And Equipment Show at Cincinnati, May 25-29

The annual meeting of coal mine officials to discuss practical operating problems will be held in Cincinnati, Ohio, May 25 to 29, 1925, under the auspices of the American Mining Congress. The National Exposition of Mines and Mine Equipment will be staged simultaneously and both the discussion conferences and the exposition will be held in the Music Hall exhibition building. The sessions throughout the week will be devoted entirely to practical problems connected with the efficient handling of mechanical equipment in coal mines.

In order to cover effectively the topics of vital interest to companies in the different fields a program committee consisting of operating officials from different districts has been formed to work out a program that will embrace problems and discussions of importance to operating men. Included in this committee are R. L. Kingsland, Consolidation Coal Co., Van Lear, Ky.; W. L. Affelder, Hillman Coal & Coke Co., Pittsburgh, Pa.; A. R. Beisal, Island Creek Coal Co., Huntington, W. Va.; W. A. Bishop, Pocahontas Fuel Co., Pocahontas, Va.; C. M. Means, Pittsburgh, Pa.; Geo. F. Osler, Pittsburgh Terminal Coal Corp., Pittsburgh, Pa.; E. L. Thrower, W. H. Warner Co., Cleveland, Ohio.; Abner Lunsford, Fordson Coal Co., Twin Branch, W. Va.; Lee Long, Clinchfield Coal Co., Dante, Va.; W. G. Duncan, Jr., Duncan Coal Co., Greenville, Ky.; T. T. Brewster, Mt. Olive & Staunton Coal Co., St. Louis, Mo., and a number of other representative operating men.

The program of discussions will be similar in general character to those of a year ago. There will be no set speeches, but representative operating men from different districts will make informal presentations of important problems, which will be followed by informal discussions on the floor.

Every operating official interested in cutting costs in coal operation will find it well worth while to be in Cincinnati during the week of May 25 to 29, to participate in the discussions and in the

### Pittsburgh Coal Co. Names New Officials

T. M. Dodson, of Bethlehem, Pa., has been appointed vice-president of the Pittsburgh Coal Co. to succeed John A. Donaldson, who resigned last week. J. M. Armstrong, general manager of mines, also resigned, and Arthur Neale has been promoted to that position from assistant manager of mines. R. Y. Williams has been added to the engineering staff. No formal announcement has been made by the company but it is reliably reported that no other changes in the officers of the company are contemplated.

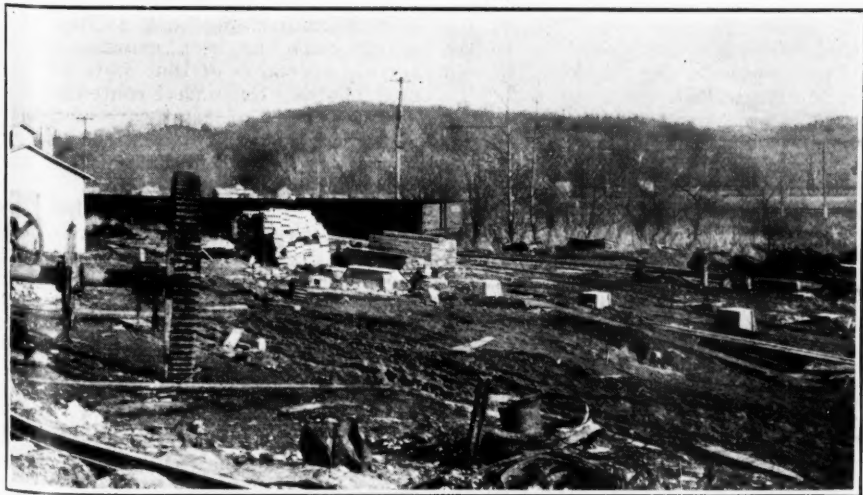
inspection of the displays at the exposition.

Many special entertainment features are being worked out. The Cincinnati "Reds" are at home during the week and the various hotels have completed arrangements to provide for the comfort of the delegates.

### New Plant Started at Scene of Mine Fire in Ohio

Work has been started on a new plant and tippie at the Middle States Coal Co.'s Mine No. 24, near Jacksonville, Ohio. This mine was being operated with Joy loading machines by The Twenty-four Mining Co. when the plant was dynamited and burned last November. Enemies of the loading machine are blamed for the deed. The Twenty-four Mining Co. is a co-operative organization in which many of the employees are stockholders.

The new tippie, which will contain Morrow equipment, is designed for a mechanical mine. The coal will be carried up the slope out of the mine on a 200-ft. apron conveyor and then run over a 50-ft. picking table before passing over the shaker screens. The lump and egg sizes will be picked again on the loading booms. In the mine, at the bottom of the slope, special arrangements are being made to provide quick dumping of the cars.



About to Replace Plant Destroyed by Fire

New tippie and blacksmith shop are to be built at Mine No. 24, near Jacksonville, Ohio, leased by the Middle States Coal Co. to the Twenty-Four Mining Co.

### Nova Scotia Miners Quit, Charging Lockout Exists; Mine Officials Man Pumps

Charging that a lockout exists at ten collieries of the British Empire Steel Corporation in Cape Breton, N. S., officials of District 26, United Mine Workers, notified the company and the Premier of Nova Scotia on March 5 that work would cease at 11 p.m., March 6 at all collieries, shops and piers of the corporation.

This decision followed the refusal of J. E. McLurg, vice-president of the corporation, to restore the credit of miners at company stores. The demand of the men that operations be resumed on a four-day-week basis at three collieries also was refused.

The possibility of government intervention was intimated by Premier E. H. Armstrong, who read to the House of Assembly at Halifax two telegrams exchanged by the Premier and R. M. Wolvin, president of the corporation. The Premier urged Mr. Wolvin not to "further pursue a course that is disturbing to the public and creating suffering" at the collieries.

Reports from union headquarters on Saturday said that, in conformity with the strike order, miners throughout the field had left the pits, withdrawing all horses and maintenance men. Cape Breton, with 6,000 men idle, is the center of the strike area. The union has 12,000 members, and it was said that, counting those who had been idle because of colliery shutdowns, not a man was working Saturday. Officials of the mine were said to be manning the pumps.

There were no reports of disorder and no indication that the government contemplated intervention. The strike instructions contained injunctions to the miners to preserve order. Whether the cessation of work will be classed as a strike or a lockout will be decided by John L. Lewis, International president of the United Mine Workers.

The parties of the Nova Scotia wage dispute have replied to the proposal of E. H. Armstrong, Provincial Premier, for the appointment of a Royal Commission of inquiry under specified conditions. Vice-president J. E. McLurg stated that the corporation was willing to abide by the decision of the commission provided the miners would agree to do the same. J. W. McLeod, president of District No. 26, said that while the miners would place no obstacle in the way of the fullest and most searching inquiry, they were without authority and without inclination in advance to accept the findings on wages of such a commission.

The Rock Island R.R. recently placed orders for 1,600 box and coal cars with the American Car & Foundry Co. The Atchison has ordered 10,000 additional cars and the Chicago & Eastern Illinois has placed contracts for 3,000 tons of rails. The Baltimore & Ohio is inquiring for 3,000 tons of rails. The Belt Railway has ordered 1,400 tons of rails and the Chicago & Western Indiana 2,300 tons. The Southern Pacific has ordered 400 ballast cars.

### Wage Cut in Kansas Causes Mines to Shut Down

Two deep mines of the Sheridan Coal Co. in the northern part of Crawford County, Kansas, operated by the Eastern Coal Co. and the Capital Coal Co. under leases, shut down March 2, after being cleaned up by the miners the preceding Saturday. The companies had posted notices that they would return to the 1917 wage scale on March 1, but the men who were working in these mines adopted resolutions that they would accept no terms other than the Jacksonville agreement.

No other companies in the Kansas field have made any apparent move to deviate from the existing contract. One of the Sheridan leasing companies which announced a wage cut is a member of the Southwestern Interstate Coal Operators Association and the other is an independent. The executive board of District 14, United Mine Workers, has asserted that the organization will insist on strict observance of the Jacksonville agreement and has made public a telegram from International President John L. Lewis commending this stand.

### Some Indiana Mines Are Business Getters

A report made available in Terre Haute, Ind., Feb. 15 showed that the mines along the E. I. & T. H. R.R., running south through the state from Terre Haute, shipped 17 per cent more coal during January, 1925, than during the previous month. This is not only true of the shaft mines but of the strip mines as well.

In order to compete with coal from outside the state several of the shaft mines at Petersburg and at points south of Petersburg are operating cutting and loading machines, very materially reducing the number of men and the cost per ton.

The Hickory Grove Coal Co., south of Riley, Ind., which is a stripping operation owned by Rochester (N. Y.) people, has operated almost continually since coal was first uncovered sixteen months ago. This operation, producing 1,800 tons of coal daily, apparently finds no great difficulty in disposing of its output.

The new Patoka stripping operation, just opening at Gladstone, Ind., will have a potential capacity of 2,500 tons a day. This company operated a stripper at Rogers, Ind., for four years and has recently moved its machinery to the new location at Gladstone. This property is owned by Indianapolis people, who have been very successful in operating stripping mines.

The Enos stripping operation, south of Oakland City, owned by Cleveland (Ohio) people who also operate very extensively in Ohio, have recently added a third unit to their equipment, giving them a potential daily capacity of 125 cars, or 6,000 tons, probably the heaviest producer in the state now.

The Pike County Collieries Corporation, owned by Danville (Ill.) and Indianapolis people, recently opened up five miles southeast of Oakland City on the Gray-Williams tract, has a capacity of 4,000 tons per day and

### Two More Coal-Loading Champions Appear

Robert Kirby and William Rice, two machine runners at the mines of the C. H. Mead Coal Co. at East Gulf, are the latest claimants of the coal-loading championship of southern West Virginia. In January they cut 10,400 tons of coal, working 184 hours and making twenty-three 8-hour shifts. The coal in which they worked had an average thickness of 48 in. and the machine utilized was the low vein type for short walls. The machine itself was in the shop only one hour for repair purposes. The miners cut the coal on contract. Their pay averaged \$22.22 each per day for the month.

has lost very few days since opening up six months ago. In fact all the strip mines on the E. I. & T. H. have had a steady run for the past six months.

The mines of the Pike County Coal Corp. at Petersburg, both shaft operations, one of which has been operating with loading machines, have shown a steady increase in output with almost straight running time. The same is true of the Neal Coal Co. mine at Hosmer, Ind.

The General Fuel Corporation mines at Somerville continue to show a marked increase in capacity and an ability to dispose of the increased tonnage. The Francisco Co.'s mine No. 2 has continued to operate steadily for the past six months and has gradually increased its output so that it now ranks with General Fuel, Pike County McClellan Coal Co. and the Neal Coal Co. mine as a heavy producing shaft mine.

### Railroads Must Furnish Cars On Own Lines

Railroads subject to the Interstate Commerce act are charged with the duty of furnishing cars for transporting traffic originating on their lines, the Interstate Commerce Commission ruled March 6 in the case of the United Collieries against the Southern Ry. and the Interstate R.R.

The commission held further that a carrier's obligation to furnish cars for shipments of traffic from points on its lines to points on the lines of its connections is joint with the latter and that arrangements between them whereby one carrier undertakes to furnish cars that are largely incumbent on the other to furnish does not relieve the latter of its obligation.

The Interstate R.R., the commission said, is not a dependent connection of the Southern for the supply of coal cars for mines served by it. The United Collieries is a corporation engaged in coal mining in the St. Charles district in Lee County, Virginia. The effect of the decision is that the Interstate R.R. must exert itself to provide coal cars for the mines on its rails and not rely on the Southern or other roads for car supply.

### Intra-Union Strife Disturbs Oklahoma and Arkansas

A factional fight threatens demoralization to District 21 (Oklahoma and Arkansas), United Mine Workers, as a result of a run-off election on Feb. 10. At the election in December no ticket received a majority. In the run-off, unofficial returns gave a majority variously estimated at from 1,000 to 1,800 to William Dalrymple, of McAlester, Okla., for president over Andrew McGarry, Tahona, Okla., the present president and a candidate for re-election. No official returns have been announced and McGarry continues in office.

The rumor has spread through the Dalrymple camp that the McGarry faction intends to hold office by force if necessary, and there have been bellicose threats of reprisal. Religion and the Ku Klux Klan, which is strong in the two states, have dipped in their paddles and further stirred the already scrambled mess of district labor politics. McGarry is a Catholic, and Dalrymple, while not known to be a Klansman, is said to have Klan support. Each faction accused its rival of opposing it for religious reasons.

The situation is further complicated by the union's losses in recent months to open-shop and co-operative mines.

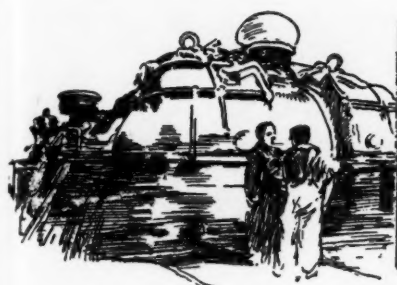
### Open - Light Drive in Utah Hits a Snag

The first definite movement to get the Utah mining code weakened to permit the use of open-flame lamps in specified mines has failed. The Union Carbide Sales Co. withdrew its application for a hearing on the point and was not represented when the State Industrial Commission held a public hearing Feb. 26 in Salt Lake City. The hearing proceeded, however, as a matter of record and several witnesses against the use of open-flame lamps were heard, including George S. Rice, chief mining engineer for the Bureau of Mines; J. W. Paul, in charge of coal-mine investigations for the bureau, and B. W. Dyer, district engineer for the bureau in Utah.

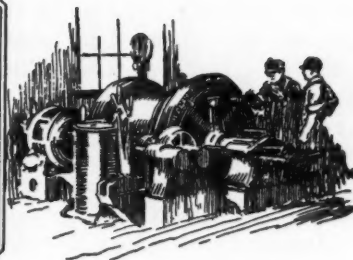
A movement against the 100-per cent electric-lamp clause in the Utah mine safety code has been growing among certain operators of that state for several months. Some have contended that certain mines of Utah are not sufficiently gaseous to warrant the expense of maintaining permissible electric lamp outfits for all miners. These operators encouraged the Union Carbide Sales Co., whose business is damaged by electric cap lamps, to send two men into the Utah mining fields recently to make an investigation. The results of their investigation were expected to appear in the hearing of the 26th, but nothing was presented.

The question before the commission was whether open-flame lamps constitute a hazard in non-gaseous mines and, if they do not constitute a hazard, whether the mine safety code should be modified to permit their use in such mines as the state mine inspector might designate. The commission has not made its decision but all the evidence was against open-flame lamps.





## Practical Pointers For Electrical And Mechanical Men



### Electrical Oven Bakes Armatures After They Are Coated with Insulation

Entire Armature Should Be Immersed Up to  
Commutator as Well as the Separate  
Coils — Temperature Control Provided

Liquid insulation, properly applied and baked on, does much to prolong the life and increase the efficiency of many kinds of electrical equipment. Take the direct-current motor as an example. Not only should the separate coils be dipped in insulating compound and baked, but the entire armature should be similarly treated. Unfortunately few mine repair shops are equipped to do this kind of work.

In the accompanying illustration may be seen an electrical baking oven that has been constructed in the repair shops of the United States Coal & Coke Co., at Gary, W. Va. This oven measures 8 ft., 6 in. square inside and is 6 ft., 6 in. high. It has firebrick walls 8 in. thick lined with 1 in. of cork insulation. The top is of sheet iron also provided with the same thickness of cork and covered with one layer of brick, laid edgewise on the outside.

#### OVEN WELL VENTILATED

In the center of the top is an 8-in. round ventilation hole. Three holes employed for a similar purpose and each 6 in. square are placed in each side wall. The rising and falling door likewise has an 8 x 10 in. hole at its bottom edge. This can be closed with a plate if necessary. Each door guide consists of two 2½ x 2½-in. angles set facing each other sufficiently far apart to permit easy sliding of the door plate which is ¾ in. thick and 27½ in. wide.

This door is counterweighted and consequently can be raised or lowered easily. At a suitable height it is fitted with a peep or inspection hole about 2½ in. in diameter. The heating equipment is of General Electric Co.'s manufacture and the elements

or grids are 3-in. sections, delta-connected for 440-volt current. They have a rating of 19 kw. A Tycos temperature control regulates the heat, and the temperature maintained can be varied from 200 to 300 deg. F.

This oven is used for drying out and baking armatures, armature and field coils and other electrical parts and apparatus. In treating such parts as armatures after they have been rewound, all finished parts such as shaft ends, pinion seats and the like are first taped to protect

them from the insulating liquid. The entire armature is then immersed in a tank of insulating compound as far as the commutator riser. This compound tank is sunk in the shop floor, and in the accompanying illustration may be seen under the armature suspended from the trolley.

#### ARMATURE DRAINS HALF HOUR

After dipping, the armature is lifted out of the tank and tilted slightly so that all extraneous or unnecessary insulating varnish will run out of the coils and other parts and drip back into the tank. This draining usually requires about 30 minutes.

After the extraneous insulating varnish has been thus drained off the armature is run into the oven and baked. After being subjected



An Armature That Has Been Dipped and Is Ready to Be Baked

After rewinding, this armature was dipped in the tank of insulating varnish sunk in the floor in the left foreground. After hanging and draining for a suitable time it is now ready to be run into the oven where it will be baked for several hours. The apparatus that automatically controls the intensity or degree of heat is mounted on the board attached to the right-hand oven wall.

to the heat of the oven for 12 to 16 hr. and the removal of the protective tape from their shaft ends such armatures as are of the open type are ready for use. Hooded types, on the other hand, must be banded and hooded after baking. They are then brush-treated with an air-drying insulating varnish.

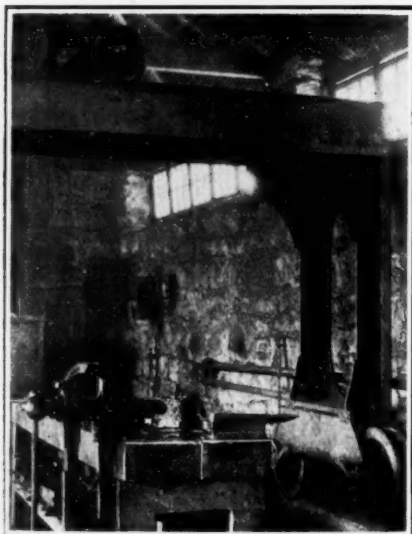
Dipping and baking in the manner just described renders an armature practically moisture-proof. Black plastic insulating varnish is normally used when treating complete armatures. For treating individual coils an amber varnish is employed. After dipping in this material such coils are hung on insulated hooks fastened to the side walls of the oven and baked in the same manner as the completed armatures except that only about 8 hr. of heat application is necessary. Field coils on the other hand are sometimes baked

from 3 to 4 days or from 36 to 48 hr. In such a case as well as with armatures and armature coils the baking may be performed in several heats none of which exceed from 8 to 9 hr. in duration. Current is always shut off from this oven at night.

There is little question concerning the advantages derived from the use of liquid insulation baked onto electrical-machine parts or elements. The atmosphere of the mines is always damp, and if an electrical device of any kind is used underground without its coils and other parts being damp-proofed it will operate at a serious disadvantage. This oven, by the quality of the work it delivers, demonstrates that expensive special equipment for baking insulation is unnecessary in order to make its advantages available to the coal-mine electrical repair shop.

### Traveling Crane Without Usual Overhead Track

Gantry cranes, which are distinguished from ordinary bridge cranes by the track being on, or near the ground, rather than overhead, are seldom used around coal mines and in no industry are they commonly employed inside a building. The illustration shows the gantry crane which is part of the equipment in the repair shop at No. 6 mine of the Raleigh Coal & Coke Co., Raleigh, W. Va. The legs or pedestals supporting the bridge of this crane were cast in the coal company's local foundry. These pedestals are of liberal



**Gantry Crane in Mine Repair Shop**

As a rule, gantry cranes are used only on long runways outside of buildings. This type of crane has the advantage that with it no overhead track has to be supported by the wall.

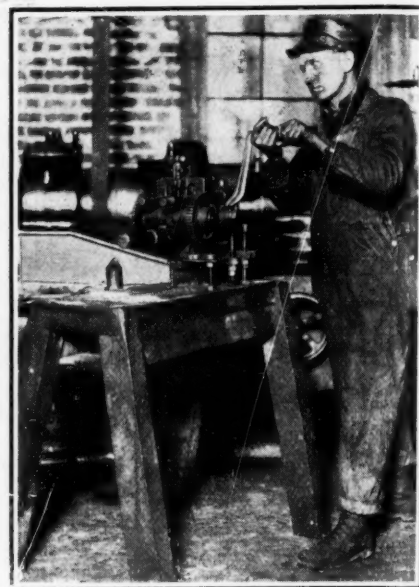
weight, and the design of the gusset bracing is such as to make the crane quite rigid.

The bridge on which the trolley operates is made up of two channels about 25 ft. in length, this being the approximate width of the building. The use of a gantry, which permits the track to be laid on the floor, greatly simplifies the installation of a crane in any building which has been erected without provision for crane equipment. However, the fact that this type requires a clear space along the wall, would in some cases be a disadvantage as it would prohibit the use of shelves or cupboards.

### Portable Keyseater Is Mounted on Stand

At most of the smaller mines keyseats continue to be cut with a hammer and chisel when repairs are being made to equipment. This method is expensive because of the tedious labor of the job and generally results in a poor fit which means that after a comparatively short time the work must be repeated. Even at the larger mines which are equipped with up-to-date machine shops, it is common practice to cut a keyseat by hand because of the difficulty and expense of dismantling and transporting a heavy shaft to the shop.

For a number of years portable key-seating machines have been on the market which are designed primarily for use in repairing equipment which is so constructed



### Better Than a Chisel

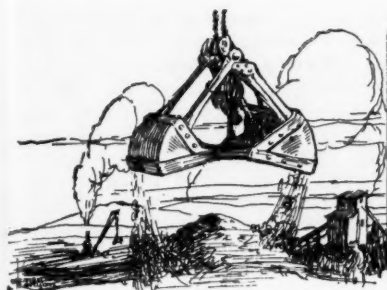
A heavy wooden stand was built for this portable keyseater, so that when not in use out on a field job it serves as a stationary machine in the shop.

or located as to be difficult to send to a shop. The picture here reproduced was taken in the machine shop of the Elkhorn Pinyon Coal Mining Co., at Stanaford, W. Va., and shows a portable key-seating machine mounted on a wooden stand or horse. The shaft, which is being keyseated, is clamped in the machine, rather than the machine being clamped onto the shaft, as would be the case if the keyseater were being used out on the job, as originally intended.

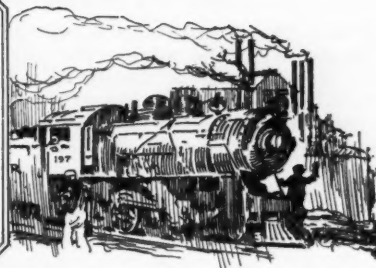
### USE IN SHOP OR FIELD

By such an arrangement the machine is converted to a satisfactory outfit for use in a small shop which is not otherwise equipped for keyseating, and at the same time it serves as a portable outfit, for in a few minutes it can be removed from the stand and is ready to be taken out on a field job. Those who have been using this machine believe that it has saved several times over its original cost of approximately \$50. It might be explained that the shop, where this keyseater was in service is now equipped with a slotter which can be used for the same work. However, the portable machine is still in favor. An assortment of milling cutters are furnished with these portable keyseaters which make it possible to cut any of the standard sizes. This type of machine is so compact that it has been used to cut new gear keyways in mine locomotive axles, without the wheels being removed.





# Production And the Market



## Soft-Coal Market Dull and Oversupplied Despite Steady Decline in Output

The bituminous coal market in general is dominated by a halting tendency, so much so that despite the fact that production has been tumbling steadily since early in January most centers suffer from oversupply. With the exception of a few brisk spells in the Middle West the weather has not been helpful to the distressed producer. Contracting is slow with the course of prices in the spot market uncertain. Business in domestic coals has been on a quite modest plane in Midwest markets throughout the last week, steam grades being in comparatively strong demand, however. The brightest spot, perhaps, is at the Head of the Lakes, where zero temperatures have instilled real strength into the market. At Milwaukee and the Twin Cities the cold wave was less severe and the pickup didn't last long. Trade in Utah is quieter than for many months; the bottom seems to have dropped out and mines are being closed down, working time having fallen off to an average of two days a week. Sporadic cold waves in the Southwest have created a spasmodic retail market, but with little effect on the wholesale trade.

### Kentucky Has Oversupply

Conditions are no better in Kentucky, a slight improvement in demand for both steam and prepared sizes incident to a few cold days having been insufficient to clear tracks of "no bills." So much of this fuel is being sold that distress prices rule the market. Output of all classes of West Virginia high- and low-volatile coal is declining, smokeless feeling the effect of the dullness almost as much as high-volatile. The general slowing down of production in southeastern Kentucky and West Virginia is tending to alleviate the clogged condition at Cincinnati, where "no bills" are somewhat less numerous—not because of improved demand but because they have been shunted further on for others to worry about. Buying is at a low ebb at Columbus

and no sign of improvement is in sight. Business at Cleveland is slower than at any time in months. Buffalo is hopeful but not oversanguine for March.

The New England market is rather ragged as to prices, for, though several smokeless agencies maintain the top price for navy standard grades, others with accumulations are quoting below that level. Then too there is little strength to demand, as consumers show a disposition to wait until conditions are more settled. At New York, Philadelphia and Baltimore the trade is practically at rock bottom and the outlook is gloomy. Commercial and industrial demand at Birmingham are fairly good, but there is scarcely any call for domestic.

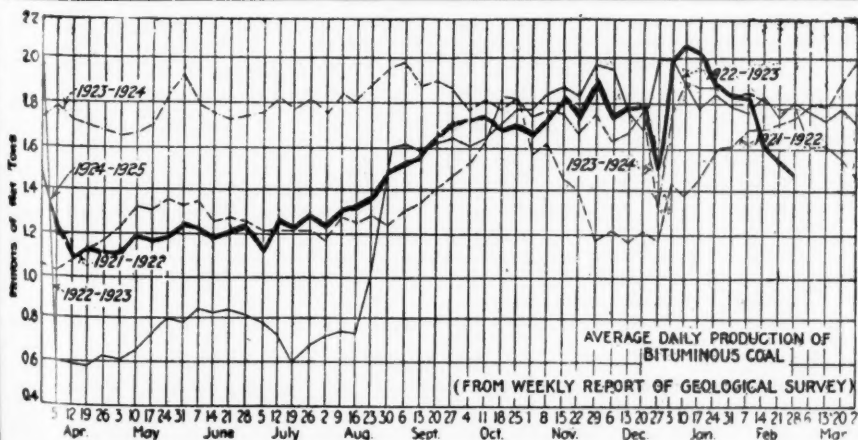
### Hard-Coal Trade Slow; Prices Weak

Trade in anthracite has developed into a weather proposition pure and simple, demand as a rule being so quiet that in some instances sales are being made subject to April prices and billing. Independent prices have slipped considerably and many mines are idle because of lack of orders. Chestnut and stove have the call though there are a fair number of orders for egg. Pea is sluggish and steam sizes move only moderately well with prices easy.

Coal Age Index of spot prices of bituminous coal on March 9 stood at 167, the corresponding price for which is \$2.02, compared with 169 and \$2.04 the week before.

Dumping of coal for all accounts at Hampton Roads in the week ended March 5 totaled 403,712 net tons, compared with 418,327 tons in the previous week.

Production of bituminous coal in the week ended Feb. 28, according to the Geological Survey, again receded, the output for the week being estimated at 8,831,000 net tons. This compares with 9,464,000 tons in the preceding week, as shown by revised figures. Anthracite output in the week ended Feb. 28 was 1,605,000 net tons, compared with 1,838,000 tons the week before.



### Estimates of Production

(Net Tons)

#### BITUMINOUS

	1923-1924	1924-1925
Feb. 14.....	11,528,000	9,758,000
Feb. 21 (a).....	10,697,000	9,464,000
Feb. 28 (b).....	11,061,000	8,831,000
Daily average.....	1,844,000	1,497,000
Coal yr. to date (c).....	519,229,000	433,278,000
Daily av. to date.....	1,856,000	1,544,000

#### ANTHRACITE

Feb. 14.....	1,900,000	1,824,000
Feb. 21.....	1,655,000	1,838,000
Feb. 28 (b).....	1,866,000	1,605,000
Coal yr. to date.....	83,729,000	81,150,000

#### COKE

Feb. 21 (a).....	277,000	258,000
Feb. 28 (b).....	319,000	254,000
Cal. yr. to date (c).....	2,339,000	2,225,000

(a) Revised since last report. (b) Subject to revision. (c) Minus one day's production to equalize number of days in the two years.

## Midwest Steam Still Lively

Trade in all domestic coals in the Middle West was modest during the week. The fore part of the week saw some brisk weather, which helped to keep a little high-grade lump and egg on the move, but the last few days reduced this demand to a rather low point. Prices on Illinois domestic coals, however, did not sag noticeably. Franklin County lump continues to bring \$3.25 in most deals; central Illinois \$2.75@3, Indiana Fourth Vein the same price and Fifth Vein 25c. to 35c. less.

Steam coal continues in strong demand, however. Southern Illinois best grade 2-in. screenings is making a brave try for more than \$2 but little of it has passed that mark. More soft weather is expected to boost the circular on this coal to \$2.25. Central Illinois screenings are strong at \$1.80 and have sold up to \$2.

Not a great volume of Eastern coal is moving into the Midwest right now, and that which does is taking niggardly prices. Contracting is practically nil. The trade looks forward to a general shutdown April 1 of more than half the mines now running in Illinois and Indiana.

In the southern Illinois field a couple of days of a flurry, mostly for lump and screenings, is all there is to indicate that there was a cold snap. Lump moved freely, but very

little egg and nut. Screenings are running short, and several mines are holding back their screenings to take care of their contracts and are offering nothing on the open market. This is the condition that exists in the Carterville field. Indications are that screenings will be as high as mine run within the next sixty days.

Many mines are closing down all over the southern Illinois field. Railroad tonnage is light and there is much discount among the miners. Strip mines seem to be doing fairly well and are putting out coal regardless of the price in some instances. Working time generally is from one to two days a week and four days a week in exceptional cases.

In the Duquoin field there is little change from last week. Mines are getting one and two days a week and the only size moving is screenings, which is quoted at about \$2. In the Mt. Olive district the movement of domestic coal was good for about two days. Steam egg and nut are not moving, while screenings are in good demand and hard to get. Mines are working two and three days. Railroad tonnage is good.

In the Standard field conditions are peculiar. Some mines seem to have a place for everything they produce and others are long on lump and are holding back screenings for contracts. Railroad tonnage is light and conditions are unsatisfactory. Prices are at the cost of production or below it.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern					Midwest				
	Market Quoted	Mar. 10 1924	Feb. 23 1925	Mar. 2 1925		Market Quoted	Mar. 10 1924	Feb. 23 1925	Mar. 2 1925
Smokeless lump.....	Columbus.....	\$3.85	\$3.85	\$3.60	Franklin, Ill. lump.....	Chicago.....	\$3.25	\$3.10	\$3.10
Smokeless mine run.....	Columbus.....	2.10	1.90	1.90	Franklin, Ill. mine run.....	Chicago.....	2.35	2.35	2.35
Smokeless screenings.....	Columbus.....	1.55	1.15	1.15	Franklin, Ill. screenings.....	Chicago.....	1.80	1.85	1.90
Smokeless lump.....	Chicago.....	3.60	3.60	3.10	Central, Ill. lump.....	Chicago.....	2.85	2.85	2.85
Smokeless mine run.....	Chicago.....	2.20	1.60	1.75	Central, Ill. mine run.....	Chicago.....	2.10	2.20	2.20
Smokeless lump.....	Cincinnati.....	3.35	3.75	3.25	Central, Ill. screenings.....	Chicago.....	1.60	1.85	1.85
Smokeless mine run.....	Cincinnati.....	2.40	1.85	2.00	Ind. 4th Vein lump.....	Chicago.....	2.85	2.85	2.85
Smokeless screenings.....	Cincinnati.....	1.60	1.35	1.35	Ind. 4th Vein mine run.....	Chicago.....	2.35	2.35	2.35
*Smokeless mine run.....	Boston.....	4.70	4.45	4.30	Ind. 4th Vein screenings.....	Chicago.....	1.80	1.80	1.80
Clearfield mine run.....	Boston.....	2.00	1.95	2.05	Ind. 5th Vein lump.....	Chicago.....	2.60	2.50	2.50
Cambria mine run.....	Boston.....	2.60	2.30	2.25	Ind. 5th Vein mine run.....	Chicago.....	2.10	2.10	2.10
Somersett mine run.....	Boston.....	2.20	2.10	2.05	Ind. 5th Vein screenings.....	Chicago.....	1.60	1.55	1.60
Pool 1 (Navy Standard).....	New York.....	3.00	2.70	2.65	Mt. Olive lump.....	St. Louis.....	2.85	2.85	2.85
Pool 1 (Navy Standard).....	Philadelphia.....	3.00	2.80	2.80	Mt. Olive mine run.....	St. Louis.....	2.50	2.35	2.35
Pool 1 (Navy Standard).....	Baltimore.....		2.25	2.25	Mt. Olive screenings.....	St. Louis.....	1.55	1.50	1.75
Pool 9 (Super. Low Vol.).....	New York.....	2.25	2.05	2.05	Standard lump.....	St. Louis.....	2.70	2.50	2.50
Pool 9 (Super. Low Vol.).....	Philadelphia.....	2.30	2.20	2.20	Standard mine run.....	St. Louis.....	1.95	1.80	1.80
Pool 9 (Super. Low Vol.).....	Baltimore.....	2.05	1.85	1.85	Standard screenings.....	St. Louis.....	1.15	1.25	1.40
Pool 10 (H.Gr.Low Vol.).....	New York.....	2.00	1.75	1.75	West Ky. block.....	Louisville.....	2.85	2.25	2.25
Pool 10 (H.Gr.Low Vol.).....	Philadelphia.....	1.85	1.85	1.85	West Ky. mine run.....	Louisville.....	1.70	1.50	1.35
Pool 10 (H.Gr.Low Vol.).....	Baltimore.....	1.80	1.70	1.70	West Ky. screenings.....	Louisville.....	1.30	.95	1.25
Pool 11 (Low Vol.).....	New York.....	1.60	1.55	1.55	West Ky. block.....	Chicago.....	2.60	2.35	2.35
Pool 11 (Low Vol.).....	Philadelphia.....	1.65	1.65	1.65	West Ky. mine run.....	Chicago.....	1.45	1.35	1.35
Pool 11 (Low Vol.).....	Baltimore.....	1.65	1.50	1.50					

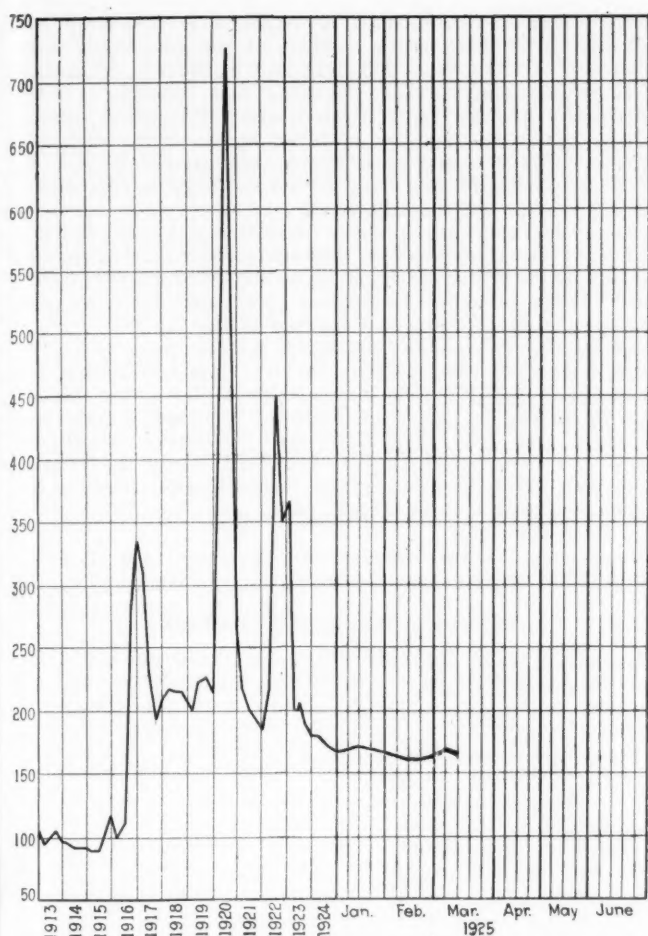
High-Volatile, Eastern					South and Southwest				
	Market Quoted	Mar. 10 1924	Feb. 23 1925	Mar. 2 1925		Market Quoted	Mar. 10 1924	Feb. 23 1925	Mar. 2 1925
Pool 54-64 (Gas and St.).....	New York.....	1.60	1.50	1.50	Big Seam lump.....	Birmingham.....	3.85	2.85	2.25
Pool 54-64 (Gas and St.).....	Philadelphia.....	1.60	1.50	1.50	Big Seam mine run.....	Birmingham.....	1.80	1.75	1.75
Pool 54-64 (Gas and St.).....	Baltimore.....	1.60	1.65	1.65	Big Seam (washed).....	Birmingham.....	2.10	1.75	1.75
Pittsburgh sc'd gas.....	Pittsburgh.....	2.55	2.50	2.50	S. E. Ky. block.....	Chicago.....	3.10	2.75	2.60
Pittsburgh gas mine run.....	Pittsburgh.....	2.30	2.20	2.20	S. E. Ky. block.....	Chicago.....	1.85	1.50	1.50
Pittsburgh mine run (St.).....	Pittsburgh.....	2.10	1.95	1.95	S. E. Ky. block.....	Louisville.....	3.00	2.35	2.35
Pittsburgh slack (Gas).....	Pittsburgh.....	1.35	1.30	1.30	S. E. Ky. mine run.....	Louisville.....	1.75	1.35	1.35
Kanawha lump.....	Columbus.....	2.60	2.35	2.35	S. E. Ky. screenings.....	Louisville.....	1.05	.80	.90
Kanawha mine run.....	Columbus.....	1.50	1.50	1.50	S. E. Ky. block.....	Cincinnati.....	2.75	2.25	2.35
Kanawha screenings.....	Columbus.....	1.05	.75	.75	S. E. Ky. mine run.....	Cincinnati.....	1.60	1.40	1.40
W. Va. lump.....	Cincinnati.....	2.85	2.15	2.10	S. E. Ky. screenings.....	Cincinnati.....	.90	.80	1.05
W. Va. gas mine run.....	Cincinnati.....	1.50	1.35	1.35	Kansas lump.....	Kansas City.....	5.00	4.75	4.75
W. Va. steam mine run.....	Cincinnati.....	1.50	1.30	1.25	Kansas mine run.....	Kansas City.....	3.50	3.10	3.10
W. Va. screenings.....	Cincinnati.....	.90	.75	1.00	Kansas screenings.....	Kansas City.....	2.25	2.50	2.50
Hocking lump.....	Columbus.....	2.60	2.40	2.40					
Hocking mine run.....	Columbus.....	1.85	1.50	1.50					
Hocking screenings.....	Columbus.....	1.15	1.10	1.10					
Pitts. No. 8 lump.....	Cleveland.....	2.35	2.30	2.30					
Pitts. No. 8 mine run.....	Cleveland.....	1.80	1.85	1.80					
Pitts. No. 8 screening.....	Cleveland.....	1.30	1.30	1.35					

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	March 10, 1924		March 2, 1925		March 9, 1925†	
			Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.34		\$8.00@9.25		\$8.00@9.25		\$8.00@9.25
Broken.....	Philadelphia.....	2.39		8.75@9.25		8.75@9.25		8.75@9.25
Egg.....	New York.....	2.34	\$8.00@8.50	8.75@9.25	\$8.50@9.00	8.75@9.25	8.25@8.75	8.75@9.25
Egg.....	Philadelphia.....	2.39	8.50@10.00	8.75@9.25	9.25@9.75	8.80@9.25	8.90@9.25	8.80@9.25
Egg.....	Chicago.....	5.06	7.50@8.80	8.00@8.35	8.17@8.40	8.08	8.17@8.40	8.08
Stove.....	New York.....	2.34	9.25@9.75	8.75@9.25	8.75@10.00	9.00@9.50	8.75@9.25	9.00@9.50
Stove.....	Philadelphia.....	2.39	9.75@11.00	8.90@9.25	9.40@10.40	9.15@9.50	9.35@9.90	9.15@9.50
Stove.....	Chicago.....	5.06	7.95@9.25	8.00@8.35	8.80@9.00	8.53@8.65	8.80@9.00	8.53@8.65
Chestnut.....	New York.....	2.34	9.25@9.75	8.75@9.25	8.75@10.00	8.75@9.40	8.50@9.25	8.75@9.40
Chestnut.....	Philadelphia.....	2.39	9.75@11.00	8.90@9.25	9.40@10.30	9.25@9.40	9.25@9.80	9.25@9.40
Chestnut.....	Chicago.....	5.06	7.95@9.25	8.00@8.35	8.61@9.00	8.40@8.41	8.61@9.00	8.40@8.41
Pea.....	New York.....	2.22	4.50@5.50	6.15@6.65	4.50@5.50	5.50@6.00	4.50@5.50	5.50@6.00
Pea.....	Philadelphia.....	2.14	4.75@6.50	6.35@6.60	5.25@6.00	6.00	5.00@6.75	6.00
Pea.....	Chicago.....	4.79	4.50@5.60	5.40@6.05	5.36@5.75	5.36@5.95	5.36@5.75	5.36@5.95
Buckwheat No. 1.....	New York.....	2.22	2.00@2.75	3.50	2.00@2.75	3.00@3.15	2.00@2.75	3.00@3.15
Buckwheat No. 1.....	Philadelphia.....	2.14	2.25@3.50	3.50	2.25@3.00	3.00	2.25@3.00	3.00
Rice.....	New York.....	2.22	1.75@2.25	2.50	1.80@2.25	2.00@2.25	1.80@2.25	2.00@2.25
Rice.....	Philadelphia.....	2.14	1.75@2.50	2.50	1.70@2.25	2.25	1.70@2.25	2.25
Barley.....	New York.....	2.22	1.50@1.75	1.50	1.35@1.50	1.50	1.30@1.50	1.50
Barley.....	Philadelphia.....	2.14	1.25@1.50	1.50	1.50	1.50	1.50	1.50
Birdseye.....	New York.....	2.22	1.60	1.60	1.35@1.60	1.60	1.35@1.60	1.60

\* Net tons, f.o.b. mines. † Advances over previous week shown in heavy type; declines in *italics*.





Index	1925			1924
	March 9	March 2	Feb. 23	March 10
Index	167	169	168	181
Weighted average price	\$2.02	\$2.04	\$2.03	\$2.18

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

At St. Louis a few days of real seasonable weather caused March to come in with lots of domestic business in small quantities and principally for the cheaper grades. There was some high grade moving, however, but not in any volume. Country domestic also is unusually good for the middle and cheaper grades, principally to restock, for some of the yards were cleaned out. Country steam is fairly good, everything considered, while carload in St. Louis is strong and wagonload fairly good.

### Kentucky Overproduces

In Kentucky there has been no improvement in the situation over the week and none is looked for. Cold weather from March 1 to 3 created a small demand for prepared sizes, and a little better demand for steam, but not enough to clear tracks of accumulated "no-bill" coal. The period of freezing temperatures was so short that it did very little good.

Buyers are not placing orders for coal to be mined, sticking to rolling coal or coal on track. As a result there is so much of this sort of fuel offered that distress prices are making the market, and levels are not improving any.

The best grades of western Kentucky 6-in. block, along with lump and egg, are being quoted at \$1.75@\$2, a few houses quoting higher, but buyers find plenty of fuel available at these levels. Some mine-run as well as steam nut has been offered as low as \$1.15 a ton, while screenings are around \$1.15@\$1.35. The situation in eastern Kentucky is about the same, lump and block selling at \$2 a ton, or perhaps under, while top quotations for fine gas block range around \$2.50, and without much demand at any price.

Some operators are trying to price eastern Kentucky mine-run at \$1.40@\$1.75, but there is plenty offered at \$1.25@\$1.50. Screenings are stiffer at 90c.@\$1.10.

Although Kentucky production has slumped approximately 25 per cent during the past few weeks it is still too large for consumption. March always is a slow period, with many large industrials closing their year on March 31 and buying in a small way, while contracts are also running out, which means open-market buying for a while. More mines are expected to close down and others to curtail production before long.

Action of the West Kentucky Coal Co. in reducing wages in its St. Bernard mines on March 2 to the 1917 scale, instead of 20 per cent under the 1919 award, was said to be necessary to meet competition of the mines in the field which have gone non-union. This company has been putting out fairly high quotations, as it produces well prepared coal, but with the market in its present state production cost had to be reduced.

### West Virginia Output Drops

Cold weather in late February and early March was not sufficiently severe to stimulate demand for domestic coal. As a result output in West Virginia of all grades of high- and low-volatile coals continues to fall off, lethargy and low prices prevailing. The smokeless industry is feeling the effect of the dullness almost as much as high volatile, except that a larger proportion of smokeless is under contract, and not so large a source of supply.

Although there is virtually no demand for Upper Potomac and western Maryland coals production continues on a somewhat larger scale than the average for last year, with Upper Potomac mines and plants on the Cumberland & Pennsylvania leading. Prices are on a low level, Pool 9 bringing \$1.75@\$1.85; Pool 10, \$1.65@\$1.75, and Pool 11, \$1.45@\$1.55.

Output has been declining in Virginia since Feb. 21 owing to reduced contract shipments and a marked slump in the demand for domestic grades. Scarcely any spot coal is moving, but where such sales are made \$1.60@\$1.75 is the range on the best steam grades. Nut, pea and slack bring anywhere from 80c. to \$1 a ton.

### Northwest Wants Rate Cuts

Head-of-the-Lakes coal men and the trade generally are buzzing over the recommendation of the examiner for the Interstate Commerce Commission that rates on coal from the mines of Pennsylvania, Maryland, Virginia, West Virginia and Kentucky to the lower lake docks be reduced from 50c. to \$1. If the recommendation is accepted it will put the Head-of-the-Lakes back on its feet as far as soft coal is concerned. Another reduction, this one of 10c. in lake boat rates, also is forecast. This looks like a surety, and while it will be only a drop in the bucket it will do much to help dock men.

The market is strong. A cold wave, in which the mercury hit below the zero mark, helped demand wonderfully. Of course, buying now is for spot delivery, and there is no contracting. Hard coal also is moving fairly well, and the outlook is rosy. Shipments off the docks totaled 17,666 cars for February as compared with 17,188 last February and 27,693 in January, 1925.

A curious situation exists in hard coal. The demand for Pocahontas is still so strong that consumers are buying anthracite only when the supply of suitable soft coal is exhausted. This undoubtedly will lead to a curtailment of supply next season, as dock men will not bring up more than they can easily sell. This year, it is reported, not more than half as much hard coal went out from the docks as last year.

All are watching Ford. He has bought another lake carrier, and his engineer who was at Duluth recently announced that an important announcement would be made soon. It is expected that Ford will go into the general coal business on a large scale.

At Minneapolis a little sharp weather coming in March was too late to do more than bolster up the retail trade a little. The winter season is over for all practical purposes. The price situation is unchanged. There is more or less distress coal from the south in the market, though the cold spell reduced it. Southern Illinois lump is steady at \$3.25; central Illinois at \$2.75; Indiana at \$2.75; western Kentucky \$2.25@\$2.50. Dock prices remain as before,

\$5.25 for Hocking lump and \$5.75 for Youghiogheny lump. Hard coal is unchanged, but some sizes are running very low and a few concerns are not taking orders for one or more sizes.

The demand for domestic sizes at Milwaukee was active during last week because of two or three nipping days, but the rush of orders has ceased with a rise in temperature and more springlike prospects. Dealers with docks report a steady and satisfactory demand from the industries and say that they will have the docks clear by the time lake navigation reopens. There is no change in prices, which are firmly held.

### Western Markets Soften

A series of cold waves, alternating at intervals of one or two days with mid-spring weather, has created a spasmodic retail market, but has had little effect on the wholesale trade in the Southwest. Most yards are overstocked, and such as are not are ordering modestly to avoid carrying full bins through the summer. Consequently the market continues to soften. Kansas shovel lump coal is down to \$4 a ton, and some shaft coal is being quoted at the same price.

The coal market in the Utah territory is quieter now than it has been in many months. The bottom seems to have dropped out of it. Mines are being closed down. Working time has been less than two days a week. Few orders are being received from any section of the territory served. The domestic market is especially dull, but in the industrial field coal is not being consumed on a scale that is encouraging. The metal industry is the best customer, as it has been for some time past. Prices continue firm. There has been no talk of reducing them, as is usual at this time of year. A decrease, however, is expected in the course of a month or two in order to encourage storage.

### Cincinnati Market Seesaws

As one end of the list has dipped at Cincinnati the other end has gradually risen. Following a slackening in the make of prepared coals bituminous slack has risen to the \$1 mark and smokeless screenings to \$1.50 for spot and \$1.75 asked in some instances. The market seems to be in much better shape than for several weeks, not that there has been any great rush in placing orders, but in clearing up the clogged condition in every direction. The Chesapeake & Ohio kept to its orders against filling up the yards at Russell, Ky., and as a result the "no bills" went to Dayton, Toledo and Detroit, but this helped some even if it only shifted the scene of the crush. The general slowing down of mines in southeastern Kentucky and in West Virginia also is having its effect.

For the first time in months the price on Kentucky block has come down to practically the working basic price of West Virginia 4-in. lump. Egg goes begging and some wholesalers with close mine connections have been applying some of this on mine-run business. Two-inch is practically out of the market due to no demand and the fact that lake business will not start for some weeks yet. Mine-run, which has been a market barometer for some time, still languishes.

The quoting of smokeless lump and egg through circulars around \$3@3.25 has militated against the hope that a \$3.50 general price would be maintained for the month. Mine-run, however, holds firm at \$2. Retail business has not changed.

Little change has taken place in the Columbus market during the past week. Buying is at a low ebb and there are few signs that conditions will improve in the near

future. Buying on the part of retailers is restricted because of fairly good stocks. Most of the coal going into yards comes from West Virginia and Kentucky, consisting of smokeless and splints. Hocking and Pomeroy grades are equally dull and only a small amount is being mined. Retail prices are irregular with cutting to clean up yards reported. Smokeless grades are selling around \$7.50@\$8; splints at \$7@7.50 and Ohio mined varieties at \$6@\$6.25. Other varieties are equally weak.

Steam business also is quiet. Utilities and railroads are taking a fair tonnage, but general manufacturing plants are buying mostly from hand to mouth from distress offerings. There is some bidding on municipal business, but this is not sufficient to cause any stir in the market.

Contracting is quieter than usual at this time due to the large amount of distress coal offered. Many contracts expiring April 1 will not be renewed promptly owing to the ease in buying on the open market. Contract prices will be about 25c. less than last year. Hocking mine run, formerly contracted at \$1.65 to \$1.90 will be quoted \$1.40@1.65 and West Virginia grades will be equally reduced. Screenings will sell at \$1@1.25 on contracts if present conditions maintain.

Production in southern Ohio is estimated from 12 to 15 per cent of capacity and a large part is railroad fuel.

### All Lines Weak at Cleveland

Despite extreme dullness in the Cleveland market, slack and nut-and-slack spot prices have stiffened 5c. to 10c. per ton, lump orders being so low that screenings are scarce. Otherwise the demand for both steam and domestic is weaker than in many months.

Coal production in central Pennsylvania in February totaled 61,863 carloads, against 71,695 in January. The daily average was about 2,500 cars, as against 2,700 cars in January. The number of "no bills" has increased, so that there are now approximately 1,800 in the district.

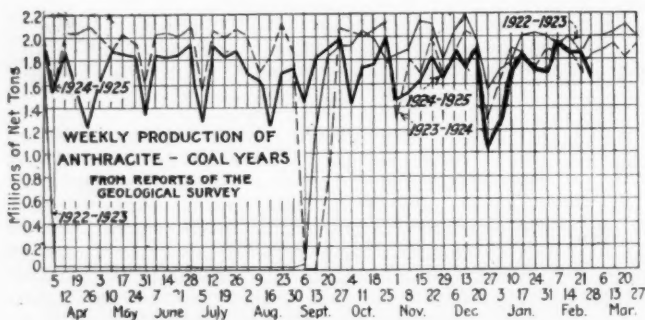
The coal trade at Buffalo promises some improvement this month over February, which was a very poor one. The weather was not cold enough to stimulate buying and the surplus alone was enough to keep the market dull. Business generally is not looking up as expected. There was too much boom spirit in the effort to get things moving. The foundation for a good start was not looked for and we must wait for something else to stir the business up. There is a good prospect of bituminous making a good advance on anthracite soon. In fact it is pretty well started now, with the use of smokeless coal and coke for house and school firing. This is in an effort to cut down the cost of fuel. Quotations are unchanged, though demand is duller than usual, at \$1.60@\$1.75 for Fairmont lump, \$1.40@\$1.50 for mine run and \$1.25@\$1.50 for slack; \$2.25@\$2.50 for Youghiogheny gas lump, \$2@\$2.25 for Pittsburgh and No. 8 steam lump and \$1.40@\$1.60 for slack; \$1.75@\$2 for Allegheny Valley mine run.

### Weaker Tendencies in New England

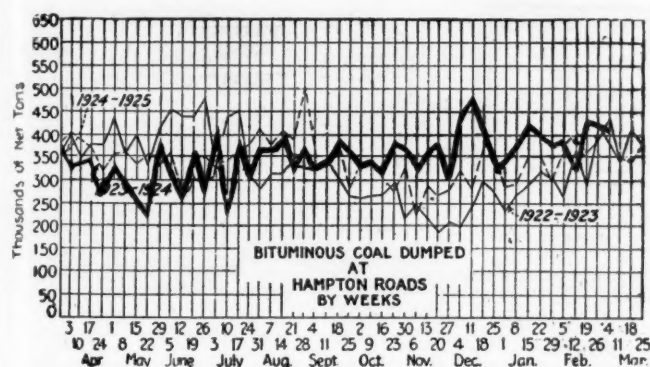
While several Pocahontas and New River agencies in New England are holding the \$4.50 price for navy standard coals, others having accumulations are selling down to \$4.25. The result is a somewhat ragged market as to price, with very little strength as to demand, and buyers prepared to wait until there are more indications of settling down. Today there are weaker tendencies observable than was the case even a week ago.

On cars Boston, Providence and Portland the quotations vary as much as at Hampton Roads. The same interests that are holding coal for the top price f.o.b. vessel have similarly marked prices for inland delivery and are waiting for the market to reach them. The range is \$5.75@\$6, but at the same time there are factors seeking orders at from \$5.45 up. The textile situation, and indeed the prospects of other kinds of manufacturing, are not sufficiently improved to warrant much reliance upon them for increased demand, and the outlook for spring business can hardly be said to be very favorable. If through individual agreements numbers of operations in central Pennsylvania are permitted to resume on anything like a normal basis there will be plenty of coal offering the New England purchaser.

All-rail there are few developments of interest. Prices drag along very much as they have for the past year, the operators having cut the selling figure as near as they dared to the actual cost of mining. To hold their staple trade







producers of high-grade coals are facing another discouraging season; it remains to be seen how many more will fall by the wayside. At the Philadelphia and New York piers the tonnage being dumped is very light indeed.

Business Hits Bottom at New York

Bituminous coal business at New York may be said to be on the rocks. Buying is at bottom and there is considerable pessimism. Although there is little talk regarding contracts it is believed considerable business still remains uncovered as buyers and consumers can see no good reason for signing on the dotted line at this time.

The market remains steady because of the heavy drop in production and the report that more closing of mines is contemplated. Consumers are watching closely the outcome of the wage conference scheduled to take place in Cleveland. They are hopeful that some good may come out of it. Prices continue on about last week's level. It is said that some sales have been made at below the minimum figures quoted.

The tone of the Philadelphia market is weak and uncertain. Spot buying by industrials has petered out and domestic business has fallen away to almost nothing. Spot quotations have softened, and some of the more prominent producers, rather than take reduced prices, have extended the time of suspension at the mines.

The contract situation is quiet, as manufacturers seem in no hurry to close, probably because of the recent drop in prices. At that, some contracts have been made at prices closely approaching present market quotations. Nothing of interest is evident at tidewater, there having been no clearances last week, with the usual amount of bunkering.

At Baltimore demand is light and prices unchanged from those of several months past. The coal business is at a low ebb, and no one can say definitely when a lasting change for the better will occur. A slightly brighter tone is seen in the export trade, however, as total dumpings at tide, consisting of cargoes and bunkers, during the month of February showed an increase of 50 per cent over those of January.

Inquiry for coal for commercial and industrial use at Birmingham continues on a fairly good basis as a whole, with good grades of washed and mine-run showing the greatest strength owing to scarcity. Spot bookings are very satisfactory and contracts are being signed readily as old agreements expire, about the same tonnage being involved and spot prices being carried, figures ranging \$2.25@ \$2.65 for prepared sizes of the better grades. The textile industry and cement operations are large consumers at present. The volume of demand from other industrial sources is moderately good. The bunker trade is devoid of any special activity, but prospects of a more steady demand than in previous years are evident, some handlers of bunker fuel being disposed to make contracts with principals instead of depending on the open market as formerly. There is an increase in shipping over the same period of last year at Southern ports.

There is scarcely any call for domestic coal, dealers with practically no stocks placing orders for a car or two at a time for prompt shipment when orders are in hand or anticipated to absorb it. Some yards still have sufficient stocks to last through the month and possibly longer unless there is a cold spell of some duration. Inability to dispose of domestic fuel is crippling mines badly in caring for steam business and is accountable for the scarcity of some of the better grades of commercial coal.

There is no material change in quotations, except that a

slight premium can be commanded for prepared steam fuel from the Cahaba field on account of restricted output, while the cheaper grades of domestic can be had at some concession under ruling schedules. There is some surplus of lump coal at present and trouble is being experienced in moving it for domestic use, and where practicable it is being applied on steam orders. Black Creek mine-run ranges \$2.25@ \$2.75; washed, \$2.25@ \$2.50; Cahaba mine-run, \$2@ \$2.25; washed, \$2@ \$2.65 per ton mines. Other quotations are about as last reported. Big Seam lump can be had at \$2.25@ \$3 mines, standard quotations being \$2.50 @ \$3 per ton. Foundry coke is strong at \$5 for byproduct and \$5.50@ \$6 for beehive product; egg, \$4@ \$4.25 per ton with fairly good movement to the northwest.

Hard Coal Suffers from Market Shyness

Although April is three weeks away, demand is so quiet that hard coal is being sold at New York subject to April prices and billing. The market has developed into a weather proposition with the chances against any activity. No one wants to carry any of the present-priced coal over the end of the month when new prices are announced. So far nothing has been revealed regarding April 1 prices nor has anything been announced regarding the resizing proposition, although the latter has been discussed at several conferences.

Quotations for independent coals again dropped last week. Many mines are idle because of "no orders" and it is expected that other suspensions will be ordered soon. Chestnut and stove are most in demand, although there are a fair amount of egg orders. Pea coal continues to drag. Movement of steam sizes is slow and prices easy.

Though typical March weather prevails at Philadelphia, it has not helped the market much. In an effort to move coal independent prices are in many instances below company quotations. The more important independents who usually maintain a circular are selling stove and nut from 15 to 25c. higher than company, with egg at company price or a bit below, and with pea generally lower. For pea coal of a sort there are offers as low as \$4.65, and this size is really plentiful around \$5. Egg also is being sold below company by some shippers.

Retailers are buying little coal, seeming to be anxious to work off present stocks in case company prices drop 50c. on April 1. Consumers are buying lightly for current consumption. Steam sizes are moving only moderately well, with some buckwheat going into storage. A strong effort is being made by independents to contract at the old prices on these sizes from April 1.

The hard-coal situation in Baltimore has shown but little change during the past several weeks, although a sharp drop in temperature during the past week caused a spurt in the trade. Householders are buying in "hand to mouth" quantities, and the next warm spell is expected to show a decided dropping off of orders from consumers, who are confident of an early spring. Stocks on hand are sufficient to meet present demands.

Anthracite trade at Buffalo is only fair. When it is very cold the orders rush in, but a sudden warm spell quickly cuts down orders and sometimes there are cancellations of even local retail orders. Buffalo does not seem to have taken very kindly to the effort to increase the use of small sizes of anthracite. The demonstration under operators' auspices was carried out as it has been at Eastern points, but the attendance was small and orders few. A sufficient explanation of this is that there is natural gas to fall back on. The commercial demand for coke is still light, even at \$4.25@ \$4.75 for foundry and \$3.75@ \$4 for furnace. At present the smelting furnaces are not running much faster than their own byproduct supply will meet. The lake trade in coal is not active yet.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Feb. 21.....	925,295	165,359
Previous week.....	902,877	170,596
Week ended Feb. 23, 1924.....	845,699	175,753

	Surplus Cars		Car Shortage
	All Cars	Coal Cars	
Feb. 22, 1925.....	256,230	113,302	
Feb. 14, 1925.....	220,798	84,602	
Feb. 22, 1924.....	125,177	48,252	5,944

## Foreign Market And Export News

### British Coal Market Shows Little Change Though Shipments Increase

There is very little change in the South Wales coal market, and, though shipments have been somewhat heavier during the past week, this does not represent an expansion of trade but a partial recovery of arrears in deliveries. Operators are finding that only those purchasers who must have Welsh coal are buying it, others being content with North of England or German varieties at lower prices.

During January the coal shipped from the Great Western Ry. docks totaled 1,942,032 tons, against 2,276,268 tons during the same month of last year. This comparison accurately represents the present state of the industry.

No agreement has yet been reached regarding the operation of a third shift at the docks and there is no possibility of hours of work being extended, so that the operators are considerably hampered in their endeavors to overtake arrears of delivery.

Most of the collieries have enormous stocks on hand and regular working is impossible. Some operators are making price cuts of 3d. to 6d. per ton to effect partial clearance, but the tendency is to hold to present prices on account of the already high losses.

The Newcastle market is depressed and the collieries are feeling the effects of both American and German competition. New business is scarce and much of it is being lost to the Continent. The Stockholm gas works has taken 50,000 tons of Durham coking unscreened coals, and also has taken a similar quantity from Germany. The price is not announced but the German figure is much below the British.

Output by British collieries in the week ended Feb. 21, a cable to *Coal Age* states, was 5,357,000 tons, according to official reports. This compares with a production of 5,341,000 tons in the preceding week.

#### Market at Hampton Roads Hits Bottom

The market at Hampton Roads last week was duller than at any time in the last six months, inquiries reaching a negligible level. Many mines had shut down, and in the absence of any demand for slack coal, egg and nut was put on the market to such an extent that prices dropped from \$3.50 to \$2.50 during the week.

Some foreign business was moving on scattered old contracts but New England and bunker business was scarcely holding to the level of previous weeks.

#### French Coal Market Lacks Life In All Branches

The French coal market lacks animation for both industrial and domestic coals. The mines of the Nord and Pas-

de-Calais have not altered their selling prices, and speculation varies widely on possible developments in this respect. It is not likely, however, that any change will be made for some time.

The Moselle mines, which recently granted an increase in the supplement to the miners on account of the cost of living, will incorporate part of it in their selling prices. In consequence of the recent wage advance in the Saar field the administration of the collieries raised its entire price list about 5f. per ton on March 1.

The finance bill which is now before the French Parliament proposes to replace the present tax on business transactions by a tax on the production and importation of fuel. The proposed impost per ton on the different varieties is 2f. 15c. for metallurgical coke and industrial coals, 5f. for house coal and other sorts of coke, and 10f. for anthracite. It would be paid by the im-

porter, the producer or the coke (or patent-fuel) maker.

Deliveries of indemnity fuels from the Ruhr to France and Luxemburg between Feb. 1 and 7 totaled 137,500 tons, including 50,500 tons of coal, 76,600 tons of coke and 10,400 tons of lignite briquets. During the first fifteen days of February the O.R.C.A. received for French blast furnaces and steel works 149,791 tons of Ruhr coke, a daily average of about 10,000 tons.

Indemnity coke continues to cost France 144f. 90c., f.o.b. at the frontier, whereas the same coke from the Ruhr is costing Belgian consumers 130f. (125 French francs) f.o.b. Montzen.

#### Export Clearances, Week Ended March 5, 1925

FROM HAMPTON ROADS	
For Jamaica:	Tons
Nor. Str. Stanja, for Kingston.....	2,036
Dan. Str. Fano, for Kingston.....	2,517
For Italy:	
Ital. Str. Oceania, for Porto Ferrajo..	5,469
Ital. Str. Nazareno, for Porto Ferrajo	7,369
Br. Str. Philadelphia, for Genoa.....	1,632
For Porto Rico:	
Amer. Schr. Emerett, for Humacao...	1,011
Amer. Str. Irene, for San Juan.....	4,698
For Cuba:	
Br. Str. Glenfinlas, for Havana.....	4,951
For British West Indies:	
Amer. Schr. Adelaide Day, for Glover	956
Island.....	
Amer. Schr. Edward R. Smith, for	570
Nassau.....	
For Virgin Islands:	
Nor. Str. Lisbeth, for St. Thomas....	3,937
For Danish West Indies:	
Nor. Str. Mathilda, for Curacao.....	5,477
For French West Indies:	
Nor. Str. Bur, for Fort de France....	6,227
For Canal Zone:	
Amer. Barge Darien, for Cristobal...	7,231
For Egypt:	
Br. Str. Calchas, for Port Said.....	2,766

#### Hampton Roads Pier Situation

	Feb. 26	March 5
N. & W. Piers, Lamberts Pt.:		
Cars on hand.....	1,934	2,272
Tons on hand.....	116,330	133,507
Tons dumped for week.....	143,457	138,779
Tonnage waiting.....	18,000	20,000
Virginian Piers, Sewalls Pt.:		
Cars on hand.....	2,056	1,991
Tons on hand.....	136,500	132,500
Tons dumped for week.....	92,722	82,296
Tonnage waiting.....	2,000	1,655
C. & O. Piers, Newport News:		
Cars on hand.....	2,604	2,684
Tons on hand.....	132,600	123,090
Tons dumped for week.....	137,328	136,704
Tonnage waiting.....	175	4,125

#### Pier and Bunker Prices, Gross Tons

	Feb. 28	March 7†
Pool 9, New York....	\$4.75@5.00	\$4.60@4.90
Pool 10, New York....	4.50@4.65	4.45@4.65
Pool 11, New York....	4.30@4.55	4.25@4.50
Pool 9, Philadelphia..	4.90@5.25	4.70@4.95
Pool 10, Philadelphia..	4.45@4.70	4.35@4.60
Pool 11, Philadelphia..	4.30@4.50	4.25@4.45
Pool 1, Hamp. Roads.	4.15	4.15
Pool 2, Hamp. Roads.	4.00	4.05
Pools 5-6-7, Hamp Rds.	3.90	3.90

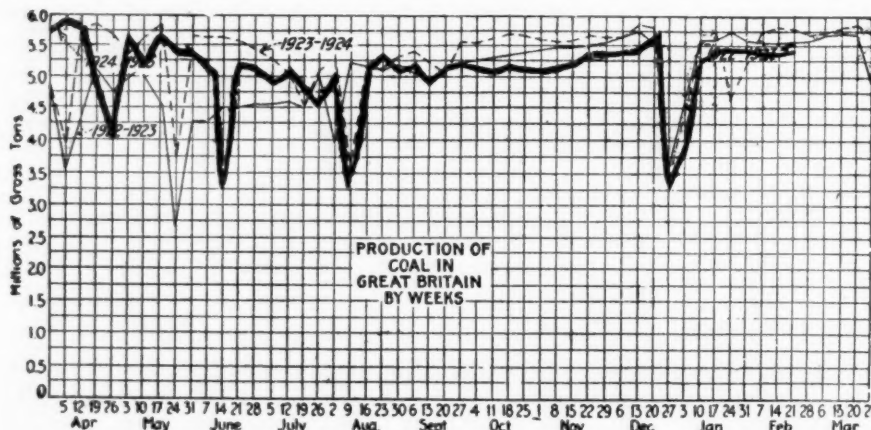
#### BUNKERS

Pool 9, New York....	\$5.00@5.25	\$4.85@5.15
Pool 10, New York....	4.75@4.90	4.70@4.90
Pool 11, New York....	4.55@4.80	4.50@4.75
Pool 9, Philadelphia..	4.90@5.25	4.85@5.15
Pool 10, Philadelphia..	4.75@4.95	4.60@4.80
Pool 11, Philadelphia..	4.50@4.70	4.45@4.65
Pool 1, Hamp. Roads.	4.25	4.20
Pool 2, Hamp. Roads.	4.10	4.10
Pools 5-6-7, Hamp Rds.	4.00	4.00

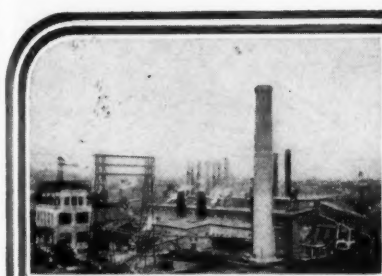
#### Current Quotations British Coal f.o.b. Port, Gross Tons

	Feb. 28	March 7†
Cardiff:		
Admiralty, large....	26s.	26s@27s.
Steam smalls.....	16s.	15s.6d.
Newcastle:		
Best steams.....	18s.6d.	18s.6d.
Best gas.....	21s.	21s.
Best Bunkers.....	17s.3d.@18s.6d.	17s.3d.

Advances over previous week shown in heavy type, declines in italics.







## News Items From Field and Trade



### ALABAMA

The Woodward Iron Co., Birmingham, has obtained permission to change the route of its railroad in the western part of Jefferson County to its tracts of coal lands and at an early date will begin the development of a large coal mine. A shaft will be sunk.

The Railway Fuel Co. has wired all the houses of employees in its Parrish mine camp and electric current will be supplied for lighting purposes as soon as connections can be made by the Alabama Power Co.

The Sloss-Sheffield Steel & Iron Co. has awarded a contract to the Fairfield works of the Tennessee Coal, Iron & Railroad Co. for 110 standard coal cars for use between its Flat Top mines and its furnace and coke-oven plants in Birmingham. The company also has bought two locomotives from the American Locomotive Works for use in this service, which has been worked out through a trackage agreement for the use of about sixteen miles of the Cane Creek branch of the Louisville & Nashville R.R., which will be connected to the Flat Top Mine yards by a short branch to be constructed by the Sloss company, enabling the corporation to effect a considerable saving in freights on its coal supply for byproduct ovens.

Papers have been filed in the Probate Court of Jefferson County dissolving the Royal Coal Co. in accordance with action recently taken by the stockholders. Frank Nelson, T. K. Lee and T. L. Nelson are officials of the company.

### COLORADO

At the annual meeting of the Victor-American Fuel Co., A. M. Johnson was elected vice-president and general sales agent, and B. W. Snodgrass, vice-president and general manager. This is a promotion for both men.

The Colorado Fuel & Iron Co. has closed five mines, one of them permanently, and has transferred business from the closed properties to other mines, thus insuring better running time for such properties as the mine at Frederick. The operations closed are the Primero mines—the East mine at Primero being abandoned—Pictou and Keble No. 2, in the Walsenburg region, and the Emerald mine, in Fremont County.

The case of Samuel Andrews, state mine inspector, against Supt. A. E. Johnson of the Chandler mine of the Victor-American Fuel Co. has fallen through. The inspector tried to prove in court that the mine was not properly fanned but after 13 witnesses had ap-

peared Justice John R. Kennedy discharged Mr. Johnson for lack of conclusive evidence. The charge was that the mine's ventilation system was not kept running continuously during the time when men were in the mine, as Section 124 of the state mining law requires.

### IDAHO

H. F. Samuels, principal owner of the Teton Coal Co. mine, won the decision of the court in a suit filed by his business associate, Robert H. Harlin. Harlin charged that Samuels and the other owners were not living up to their contract with him and that an attempt was being made to deprive him of his lease on the property. The court held there was no evidence to substantiate the charge of fraud and dismissed Harlin's complaint. Samuels announces that development work in the mine is going forward.

### INDIANA

Local union No. 1575, United Mine Workers, located at Sullivan, has adopted resolutions calling upon the executive board of district No. 11 to dispense with the services of a district organizer as a matter of economy while many of the miners are unemployed.

Five thousand dollars damages and possession of a coal mine near Ferguson Hill, near Terre Haute, was asked by the Fauvre Coal Co. in a suit filed in Superior Court Feb. 24 against Joseph M. Lubin and William F. Brown. The complaint charged that on Nov. 1, 1923, they leased the coal properties to the defendants on which they were to receive 10c. a ton royalty. An accounting was to be made twice a month, according to the complaint, but this has not been done. It is charged that \$1,000 is due in royalties.

### ILLINOIS

J. G. Crawford, former fuel engineer for the Chicago, Burlington & Quincy R.R., has been named general manager of the Valier Coal Co. mine at Valier. The mine is owned by the railroad.

Bondholders of the Jackson Coal Co., Jackson County, purchased the company's holdings at Danville, Feb. 28 for \$152,944.12. The sale was approved by Federal Judge W. C. Lindley. The sale was originally held in Jackson County Feb. 21 and the bondholders made a bid of \$125,000. This bid was raised to the larger sum the following week in order that preferred claims, including mortgages and ex-

penses of the receivership, might be taken care of.

The Illinois Commerce Commission has authorized the Illinois Power & Light Corporation to acquire all of the outstanding stock of the St. Louis, Troy & Eastern Ry., and the St. Louis & Illinois Belt Ry. for \$2,030,000, of which \$1,700,000 will be cash. Both roads are controlled by the Comrades of St. Louis, Mo., who also own Donk Bros. Coal & Coke Co., of that city. The mining company through the sale of the railroads to the power corporation will obtain valuable coal contracts.

The Bradbury-Scullin Coal Mining Co. has filed a voluntary petition in bankruptcy. The company's mine is at Marion.

### KANSAS

The Kansas district of the United Mine Workers, after voting not to permit any of its men to work on the 1917 scale at the Eastern and Capital mines at Pittsburg, on March 1 levied a substantial assessment upon the members who are working. This assessment is in aid of the men thrown out of work by the closing of the two mines.

The Italian Coal Co., a co-operative organization of 25 Italian miners, filed suit for \$50,000 damages for breach of contract against the Patton Coal & Mining Co., of Frontenac, in the Crawford County District Court, Pittsburg on March 2. The plaintiffs allege they leased Patton mine No. 7 on March 7, 1922, the lease to run until Jan. 15, 1924. The petition asserts that the lease provided that the Patton company would take the mine's output at \$3 a ton, but that it paid only \$2.85 a ton on more than 11,000 tons and defaulted entirely on pay for more than 2,000 tons. The plaintiff company asserts it had to spend \$15,000 in pumping out the mine and putting it in condition to operate. It also avers that the Patton company attempted to force the plaintiff either to abandon the mine or change the terms of the contract, which caused the Italian company to cease producing about Jan. 15, 1924, but it kept the mine in condition for operating for more than six months at a cost of \$3,000.

### KENTUCKY

It was erroneously reported in this column Feb. 26 that the William S. Harman Coal Co. of Columbus, Ohio, will sell the output of the Daniel Boone Coal Co. mines (formerly the Hazard mines of the Maynard Coal Co.). These mines will be operated by the Columbus Mining Co., of Chicago, and the full

output handled by that company. This arrangement has been in effect since Jan. 20.

Ancillary receivers have been appointed to operate the Alma Thacker Fuel Co. mine in Pike County. On Feb. 20 Judge Cochran in Covington named Robert F. Laylin and Glenn C. Deaton as receivers.

The Gorman-Pursifull Coal Co., Whitesburg, will extend development of its holdings.

Hopkinsville reported on March 3 that the property of the defunct Memphis Coal Mining Co., sold recently to satisfy judgment of Eastern bankers, to Andrew Hogg, Madisonville, had been resold by court order when Hogg failed to make necessary bond. Hogg bought it a couple of weeks ago for \$36,501, including tippie, machinery, 1,700 acres of coal land in fee simple, leases on about as much more coal land, 53 miners' homes, and blacksmith, power and other mine buildings. In parcel lots the total bids were \$36,500, and when sold as a whole Hogg bid \$1 over the parcel price and got it. On the resale the property was sold to W. D. Fuller of Nashville, Tenn., for \$32,600, other than the leases, which were sold to Hogg for \$150. The Memphis Mining Co. had an investment of over \$600,000 in the property.

The South East Coal Co., Whitesburg, is planning the development of coal lands at Sandlick, and will build a branch railroad.

Judge Charles I. Dawson, of the federal court, Louisville, at Owensboro, on March 6, heard cases against union miners, strikers, union officials, etc., in the injunction suits filed by operators. Temporary injunctions were granted the Rogers Brothers Coal Co., Bevier, and the Lee Land & Mining Co., Island, by the federal court some time ago, and the question of making the injunctions permanent will be decided later. In spite of the injunction at Bevier the camp has been shot up, and was placed under guard of state troops, the latter having been fired on two or three times, and a building also has been burned during the period of injunction.

Willis M. Johnston, formerly with the Emmet O'Neal Coal Co., is now connected with the Black Creek Coal & Mining Co., Louisville.

Rowan Holbrook, W. H. Parks and Geo. M. Johnson, of Hartford, are reported to have taken an option on several thousand acres of coal land in the Moseleyville and Panther sections of Daviess County, and plan expending about \$1,000,000 in development.

Bills designed to provide for mine emergencies in Kentucky, in the form of rescue stations at Pineville, in eastern Kentucky and Madisonville, in western Kentucky, were introduced in Congress on Feb. 26, by Representatives Robsion and Kincheloe of Kentucky. The bills are practically identical except as to location of stations, and provide for station, car, crew and crew quarters, and authorize the necessary appropriations for operation of the stations. Kentucky has no stations now, the eastern field having to depend

#### General Manager's Residence

At Coalwood, W. Va., scene of some of Consolidation Coal Co.'s operations in McDowell County, W. Va.



on stations in the Pittsburgh or West Virginia districts, and western Kentucky on an Indiana station at Evansville.

#### MICHIGAN

The Peoples Coal Co. property four miles north of Albion is to be sold at once to satisfy creditors. The stock was held mainly by Battle Creek investors. A reorganization is hoped for, so that the mine may try to run again.

#### MISSOURI

The Simmons Coal Co. is reported to have bought the 100-acre farm of Mrs. William Pollack near Fulton. The land is near the company's present operation. The price of the farm was said to be \$10,000.

The Willis Coal Co., of which E. J. Krause is president and C. H. Krause is vice-president and general manager, has opened up attractive offices in the Century Building, St. Louis. The Ebony Coal Co., which, according to announcement, will handle the output of the mines of the Willis Coal Co., has offices adjoining. E. L. May is in charge of the sales office.

#### MONTANA

The Bair-Collins Coal Co., of Round-up, apparently does not belong in that class of coal operators who are "in the red" in times like these. F. H. V. Collins, president, says his company earned 17 per cent on its capital investment during 1924 and is without bonded indebtedness. A good market has given the mine fairly steady running time, and extended electrical haulage and other improvements have reduced the cost of operations.

#### NEBRASKA

Nebraska's first incorporated coal mine company has been formed and is now operating a small mine near Rulo under the name of the W. I. Lewis Coal Co. The organizers are Willard I. Lewis, Cora Lewis and William Shepard, all of Rulo. The company is capitalized at \$100,000 of which \$20,000 in stock is to be offered for sale at once. The company sunk a shaft last October and has taken out a few cars of coal. Rulo is in the southeast corner of Nebraska in the region of the Leavenworth (Kan.) coal district.

#### NORTH DAKOTA

According to the report of the state geologist, Dr. A. G. Leonard, a professor of the University of North Dakota, the production of North Dakota lignite has been in excess of 1,000,000 tons a year for the past three years. There are 259 mines producing. This number is being changed constantly by the opening of new mines and the closing down of old. The state has an area of 28,000 miles of coal-bearing fields, available for mining, with an average depth of 16 ft. Considerable progress has been made of recent years toward open pit mining.

#### OHIO

The Mink Run Mine, which had been idle for the past year or more, has resumed operations with about 85 men employed. It is being operated on a co-operative basis.

The second annual first-aid contest and field meet under the auspices of the Ohio Association of Safety Experts will be held at Zanesville some time in August, the exact date to be fixed later. The selection of the place was made at a special committee meeting in Columbus March 4, attended by mining safety experts from all parts of the state. The first meeting, held at Bellaire last year, was a pronounced success. The committee in charge of the arrangements consists of C. J. Albasin, Commissioner for the Pittsburgh Vein Operators' Association; Frank Ledvinka, president of Subdistrict No. 4, United Mine Workers; W. H. Haskins, secretary of the Central Ohio Operators' Association; Arthur A. Beckman, secretary of the Bellaire Chamber of Commerce; John Rigby, general manager of the Akron Coal Co. and J. W. Rarick, safety commissioner of the National Coal Co., Cambridge.

The sales office of Monsarrat Bros., coal operators in the Crooksville field, located in Columbus, have been closed and sales manager Fred Watson has become interested in the restaurant business in Detroit.

After months of negotiation Cincinnati's Planning Commission has finally given its sanction to the erection of a byproduct coke plant that will be located to the west of the city near Riverside. Eaton Rhodes & Co. is fathering the plans, which are said to call for a seventy oven capacity and



which will cost in all in the neighborhood of \$2,000,000. An associate company will distribute gas to the lower river suburbs.

Offices of the Fort Dearborn Fuel Co. in Cincinnati have been notified that Quin Morton, of Charleston, W. Va., one of the pioneer operators of Paint Creek and heavily concerned in that company, is seriously ill. Mr. Morton suffered a stroke of paralysis in Chicago two years ago and his physicians hold out little hope for his recovery.

Mine No. 6 of the Zanesville Coal Co., located at McCluney, has resumed operation after an idleness of more than six months. In all about 100 men will be given employment.

Extensive development work is being done by William S. Harman, of the William S. Harman Coal Co., on coal lands across the Muskingum river from Philo. Mr. Harman has already purchased in fee a considerable acreage and more will be taken over later if the drillings now being made prove the properties. It is planned to operate by stripping and several large steam shovels will soon be on the ground.

## PENNSYLVANIA

The breaker of the South Penn Coal Co., located a half mile west of Port Carbon, near Pottsville, was destroyed by fire Feb. 27. The loss is estimated at close to \$500,000. The breaker recently was built to replace one destroyed by fire a year ago. Three hundred men were employed.

The new bituminous-coal development of the Melva Coal Co. is to be a shaft operation, 400 ft. deep, which will be constructed about two miles southeast of Ebensburg, to work out a territory of approximately 3,000 acres of Lower Kittanning coal. The Cambria & Indiana R.R. will be extended from Revloc and cross over the P. R.R., State Highway (William Penn) and the Southern Cambria R.R. with an extensive trestle, at a point near the

western borough line of Ebensburg. The shaft will be sunk on the western flank of the Wilmore Basin and drainage will flow into the Conemaugh River. The parties interested in this proposition are known as the Weaver interests, who also operate the Monroe Coal Mining Co. (Revloc No. 1) and the Heisley Coal Co., (Heisley Nos. 1 and 3). J. H. Weaver, of Philadelphia, is the controlling factor. Operations will commence this spring. They have also under consideration the sinking of another shaft of equal proportions about two miles south of Revloc.

Though the election of officers of the Scranton district of the miners' union will not be held until next June, candidates are appearing. It has been announced that Enoch Williams, secretary-treasurer, will have opposition from Hubert Farrell, of Archbald, and now comes the statement from Stanley Edmunds, who was deposed as president of the Woodward colliery local union in Edwardsville by district officials, that he will battle against Rinaldo Cappellini for the district presidency. Within the next few weeks other candidates for the presidency are expected to enter the race. Among the prominent names heard is that of William Brennan, former president and now an international organizer. There will be plenty of opposition, too, for other offices, it is indicated.

Evidently feeling that the miners in his district are slipping, John Brophy, president of the United Mine Workers of District No. 2, in a communication dated March 2 to Charles O'Neil, secretary of the Central Pennsylvania Coal Producers' Association, demands that members of the latter organization abide by the Jacksonville scale. This action was prompted by the opening of the Adrian Mine and an attempt to operate the Maple Run mine at the 1917 scale.

Herman E. Carletti, executive board member of Territory 5, District No. 2, United Mine Workers, tendered his resignation to President John Brophy on Feb. 28. Carletti, who has been active in union affairs for years, said he

resigned because of criticism of his efforts in encouraging union miners to work in their home districts under the Jacksonville agreement. Carletti had been outspoken in his condemnation of union miners who left their home districts because of lack of work and worked under 1917 wage rates in non-union districts.

## SOUTH DAKOTA

The state coal mine is operating efficiently and should continue, according to a report made Feb. 21 by a committee of the Legislature. The mine has held down the price of Dakota coal by selling consistently at \$2 a ton at the pit mouth, according to the report.

## UTAH

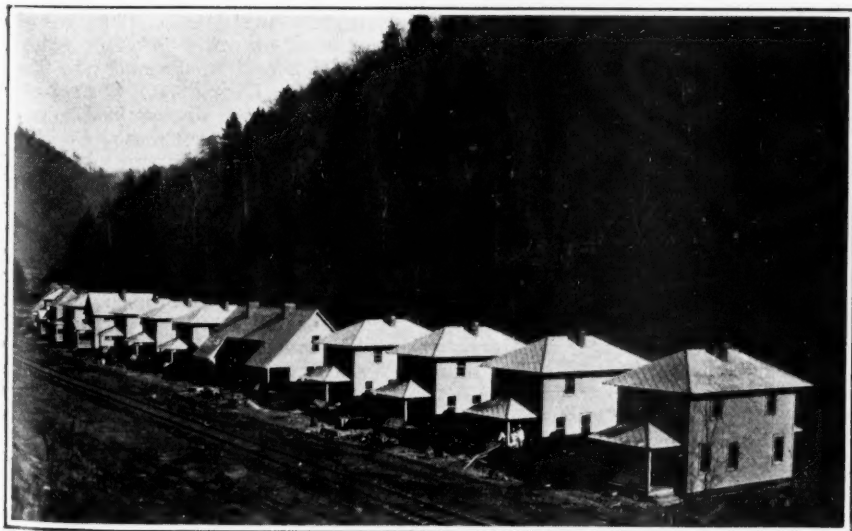
King Mine No. 2 of the United States Fuel Co. was closed the last week in February on account of market conditions. The mine is located at Mohrland, in Carbon County. The company has three other mines which will continue in operation for the time being, at any rate.

It is announced that the United States will appeal to the circuit court from the decision rendered recently by Judge Tillman D. Johnson in the federal court at Salt Lake City in favor of the Carbon Land Co. and others. The case, regarded as of great importance, involves title to coal lands in Carbon County declared to be worth four or five million dollars. The litigation started more than 20 years ago. The government claimed that the victors in the recent decision used the state's office to gain land that was mineral in character and to which the state could not get title without affidavits that it was non-mineral in character.

Utah's coal-mine safety measures adopted in the spring of last year following the Castlegate disaster, were praised recently by the American Association for Labor Legislation of New York. The association urged compulsory rock-dusting of all coal mines and pointed to Utah as a pioneer in this field.

## VIRGINIA

The State of Virginia has received bids on 60,000 tons of navy standard New River and Pocahontas coal to be delivered over the course of a year, practically all leading coal dealers in this section bidding. The contract has not been awarded. The bids were as follows: C. & O. Coal Agency Co., \$2.25; Pocahontas Fuel Co., \$2.25; Maryland Coal & Coke Co., \$2.23; Crab Orchard Coal Co., \$2.10; Flat Top Fuel Co., West Virginia Coal Co., Minter Fuel Co., Pocahontas Coal Sales Co., White Oak Coal Co., Smokeless Fuel Co., General Coal Co., Crozer-Pocahontas Co., Virginia Smokeless Coal Co., Raleigh Smokeless Coal Co., all \$2; Warren Dudley Co., W. E. Diggins Coal Co. and Coalfield Fuel Co., \$1.74; A. T. Massey Coal Co. and Co-operative Fuel Co., \$1.75; Central Pocahontas Coal Co. and Long Coal Co., \$1.80; Sugar Creek Coal Sales Co., \$1.83; Fort Dearborn Fuel Co., \$1.90.



Houses Still Under Construction at Caretta, W. Va.

These have been constructed for the men working at Mine No. 261, Consolidation Coal Co. Good houses in a beautiful setting needing only gardens to give the final touches to the scene.

### WEST VIRGINIA

The Rev. John E. Wilburn and his son, John Wilburn, serving eleven years each in the penitentiary for murder in connection with the miners' armed march of 1921 in Logan, will be freed early next year under executive clemency granted by Governor E. F. Morgan March 3, the day before he went out of office. Governor Morgan commuted the sentences to five years each, which, with time off for good behavior, will release the elder Wilburn next February and his son the following April. The Wilburns were tried for the murder of John Gore, Logan County Deputy Sheriff, who was killed during the fighting on the Logan County border, incident to the attempt of the miners' army to invade that county.

On March 1 the twin mine tippie and power house of the Corona Coal Co. at Hepzibah were destroyed by fire, and a few hours earlier the wheel-house of the Cortright-Cornog Coal Co. near Bridgeport was blown up by dynamite. The loss at Hepzibah was about \$35,000, covered in part by insurance. The company will rebuild at once in order to resume operations just as soon as possible.

The Kanawha & Hocking Coal Co., operating in the Kanawha field, reports that about 500 men are at work at the Carbondale and other mines of the company and that a fair output is being maintained. Although the Marting mine is idle, operations will be resumed there soon. No trouble has been experienced from the striking miners recently evicted from company houses and now living in tents and barracks at the expense of the union.

### WYOMING

Mine No. 42 of the Sheridan Wyoming Coal Co., at Acme, broke all its previous records on Feb. 25 by dumping 3,642 tons from 1,202 pit cars, which filled 72 railroad cars. Frank Welch is the inside foreman, Charles Shott the outside foreman and James Lytle motor boss.

### ALASKA

About \$11,000,000 is to be spent during the next six years in the development of the Alaskan Railroad, according to Noel W. Smith, general manager. Most of this appropriation will go into extended and improved roadbed and trackage, he said, partly to supply a better outlet for coal from the Alaska Matanuska coal mine, the owners of which are said to have contracted some coal down the Washington and California coast for delivery this summer.

### CANADA

Premier Ferguson, of Ontario, announced in the Legislature March 4 that the government hoped after May 1 to have 100,000 tons of Alberta coal brought to Ontario. The method of keeping track of the costs had been agreed upon and it was hoped that if the railways carried the coal at actual cost coal might be provided for Ontario from Alberta, and perhaps from

Nova Scotia also, at a cost which might compete favorably with coal from the United States.

A delegation from various Ontario and Quebec cities and representing the Canadian Gas Association interviewed the Minister of Mines at Ottawa, a few days ago, asking for a reduction in the duties on bituminous coal for coking purposes and that their association be placed on the same basis as the metallurgical interests, who are given a drawback of 99 per cent on the duty paid.

The Provincial Government of Alberta is considering making further trial shipments of Alberta coal to the Ontario markets during the present year, according to an announcement made by Premier Greenfield, following a conference with Charles Stewart, Minister of the Interior.

The Board of Trade of Edmonton, Ala., has passed a resolution favoring an increase in the duty of bituminous coal and also a duty on anthracite and coke, the rate in each case to be such as expert inquiry may show to be adequate for the development of the Canadian coal industry to meet the coal requirements of Canada and insure full independence for this country. The resolution points out that coal representing a total value of approximately \$102,000,000 is imported annually into Canada from the United States.

### Traffic

#### More New Coke Rates Approved In New York

The Public Service Commission of New York has approved new rates on the New York Central (East) on coke, coke breeze and coke dust, carload minimum weight, in open cars 50,000 lb. (except that when car is loaded to full visible or cubical capacity actual weight will apply, but not less than 35,000 lb. and in box or stock cars 40,000 lb. (rates per net ton), from Harriet to the following stations on New York Central (West): Angola to Silver Creek, inclusive, \$1.51; Van Buren to Westfield inclusive, \$1.64; Forsyth, Ripley and State Line, \$1.76; also to these stations on New York, Chicago & St. Louis: Angola to Silver Creek inclusive, \$1.51; Dunkirk to Westfield inclusive, \$1.64; Forsyth, Ripley, Nypenn and State Line, \$1.76. No joint rates heretofore in effect. Effective March 20, 1925—P. S. C. N. Y. C. No. C-153.

Also on the New York Central (East) on coke, coke breeze and coke dust, from Buffalo, East Buffalo and Harriet to these stations: Auriesville to Indian Castle inclusive (on West Shore), \$2.77; increase 50c. per net ton. Effective March 20, 1925.—P. S. C. N. Y. C. No. C-154.

New rates also have been approved of the New York Central (East) on coke, carload minimum weight shown below, from Hanna Furnace Co.'s plant at Buffalo to Donner Union Coke Co.'s plant at East Buffalo (on Delaware, Lackawanna & Western), 32c. per net

ton, minimum weight 80,000 lb., when in private equipment and 41c. per net ton, minimum weight 70,000 lb. (except that when car is loaded to visible or cubical capacity, actual weight will apply) when in railroad owned equipment. No joint rates heretofore in effect. Effective Feb. 18, 1925. — P. S. C. N. Y. C. No. C-155.

#### Alabama Operators Seek Change In Mississippi Valley Rates

Edgar Smith, examiner for the Interstate Commerce Commission, is hearing the complaint of the Alabama Mining Institute and district coal operators against the Illinois Central R.R. and other coal-carrying lines seeking an adjustment of rates from this district to points in the Mississippi Valley. It is contended that these points are taking coal from western Kentucky and southern Illinois fields on account of the alleged discriminatory rates as compared with those applying from Alabama mines, which are practically half the distance from the sources of consumption. By virtue of the inequality of existing rates based on distance, Alabama mines are practically excluded from markets for thousands of tons of coal annually which should and would naturally be supplied from this district. C. R. Marshall, Washington attorney, and S. L. Yerkes, chairman of the railroad committee of the Alabama Mining Institute, are representing the coal interests while the railroads have a large array of rate experts, freight and traffic officials to look after their interests. Mining operations in southern Illinois and western Kentucky also have representatives present who are vigorously resisting any change in the present rate status.

#### G. & E. Wins Third Suit Against C. & O.

In a decision recently handed down by the Interstate Commerce Commission the rates on interstate shipments of coal received by the Chesapeake & Ohio from the Greenbrier & Eastern R.R. were declared to be unreasonable and unduly prejudicial. The commission entered an order lowering the differential on coal in carload lots 20c. a ton, effective April 20. The Chesapeake & Ohio will be required to make reparations. It is estimated by W. E. Deegans of Huntington, one of those interested, that the Chesapeake & Ohio will be required to pay the Greenbrier & Eastern between \$300,000 and \$400,000. It is stated by Mr. Deegans that coal companies along the Greenbrier & Eastern have been forced to pay a differential of 20c. a ton higher than the average throughout the New River district for three years. The Greenbrier & Eastern operates between G. & E. Junction, in Greenbrier County, and Marfrance, a distance of about 12 miles. It connects with the Sewell Valley R.R. at G. & E. Junction and the Sewell Valley in turn connects with the Chesapeake & Ohio at Meadow Creek, a distance of twenty-five miles. This is the third suit the Greenbrier & Eastern has won against the Chesapeake & Ohio.



## Association Activities

At the regular monthly meeting of the **Kanawha Operators Association** held on Feb. 28 a resolution was adopted pledging members to refrain in the future from shipping coal before it was actually sold. This action was taken after C. C. Dickinson had presented the question of discontinuing "no bill" shipments and after A. R. Yarbrough, traffic manager, had explained how such shipments frequently interfered with the transportation as well as with the legitimate selling of fuel. He said that too often sales agencies were only too willing to take chances on having coal shipped and then selling it, making it necessary frequently to haul coal back and forth in yards before there was a revenue billing for it. The association also adopted a suggestion by the railroads to increase the "back haul" charges on "no bill" cars from \$2 to \$5.

The board of directors of the **Central Pennsylvania Coal Producers' Association** and the executive board of the **Association of Bituminous Coal Operators of Central Pennsylvania**, met in the headquarters of the associations in Altoona, Pa., on March 2. The resignation of W. R. Craig, a member of the former board, was accepted and F. D. Lambert, of St. Marys, was chosen to succeed him. The resignation of S. T. Brown, member of the scale committee of the latter body, also was accepted, and C. Law Watkins, of Cresson, vice-president in charge of operations of the Pennsylvania Coal & Coke Corporation, was named as his successor. The meeting was called for a general discussion of the coal industry in the district. Members were unanimously of the opinion that the outlook for business after April 1, when the new coal year begins, is the gloomiest in central Pennsylvania in many years. It was pointed out that many of the larger mines that carried over contracts last year will be unable to renew their contracts under the present scale and must close, their only hope being in a readjustment of wages in the Jacksonville agreement. Fifty per cent of the coal now being produced in central Pennsylvania comes from non-union operated mines. It is the opinion of many local operators that if the scale is not revised the entire district will become non-union within another year by the voluntary action of the miners. It was stated that if a readjustment is made, this district will resume its place in the markets of the country. This depends upon railroad rates as well as wage adjustments. Operators expressed approval of the recommendation of the Interstate Commerce Commission examiners that rates be reduced from central Pennsylvania and Pittsburgh generally to lower Lake Erie ports for transshipment beyond.

## Coming Meetings

**New England Coal Dealers' Association.** Annual meeting, March 25-26, Springfield Auditorium, Springfield, Mass. Secretary, C. R. Elder, 141 Milk St., Boston, Mass.

**Upper Potomac Coal Association.** Annual meeting April 6, Cumberland, Md. Secretary, J. F. Palmer, Cumberland, Md.

**National Retail Coal Merchants Association.** Annual convention Traymore Hotel, Atlantic City, N. J., May 11-14. Resident vice president, Joseph E. O'Toole, Transportation Bldg., Washington, D. C.

**Mine Inspectors' Institute of America.** Annual Convention May 19, 1925, at the Jefferson Hotel, Peoria, Ill. Secretary, G. B. Butterfield, Hartford, Conn.

**Chamber of Commerce of U. S. A.** Thirteenth annual meeting, May 20-22, Washington, D. C.

**Manufacturers' Division of the American Mining Congress.** National exposition of coal-mining equipment, Cincinnati, Ohio, week of May 25. Secretary of American Mining Congress, J. F. Callbreath, Munsey Building, Washington, D. C.

**National Coal Association.** Annual meeting, June 17-19, Edgewater Beach Hotel, Chicago, Ill. Executive Secretary, Harry L. Gandy, Washington, D. C.

**American Society for Testing Materials.** Twenty-eighth annual meeting, week of June 22, Chalfonte-Haddon Hall, Atlantic City, N. J. Secretary-treasurer, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

**Chemical Equipment Exposition.** June 22-27, Providence, R. I. Association of Chemical Equipment Manufacturers, 1328 Broadway, New York City.

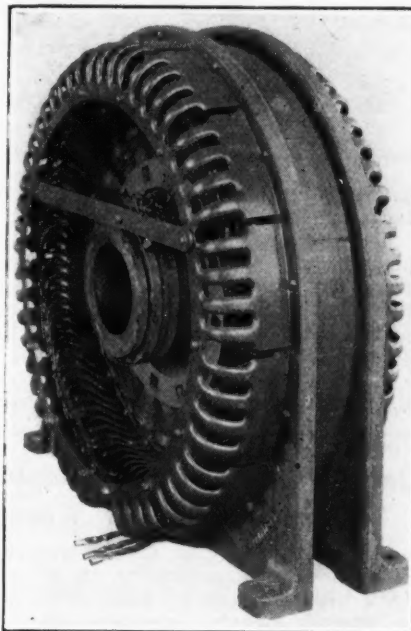
## New Equipment

### Correct Power Factor on Compressor Drives

A new type of synchronous motor has recently been developed by the General Electric Co. for direct drive of slow-speed reciprocating compressors which have their greatest application in furnishing compressed air for hammers and drills. This motor, bearing the designation TS, is being built in more than three hundred standard ratings larger than 20 hp. at 60-cycle synchronous speeds between 72 and 450 r.p.m. Due to the nature of compressor drives these motors are given a maximum rating at a temperature rise of 50 deg. C.

Other synchronous motors quite successfully have been applied to this slow-speed service for a number of years. During that time the definite requirements of compressor drives have been the subject of extensive study and investigation. The results of these tests have now been incorporated in this new motor, which, it is claimed, embodies all the necessary and desirable characteristics for motors designed for this class of service.

Since electrical equipment has been adopted generally in place of slow-speed oil and steam engines for driving compressors, the direct-connected synchronous motor has been popularly accepted for this service in preference to the belted induction motor, because of its great saving in floor space and improvement of power factor. To strengthen and further justify this preference and to produce the most desirable drive for slow-speed compressors, the motor has been carefully designed to obtain: (1) extreme simplicity of the starting operation; (2) starting conditions satisfactory to the power company; (3) adequate torque; (4) efficient operation, and (5) minimum flywheel requirements.



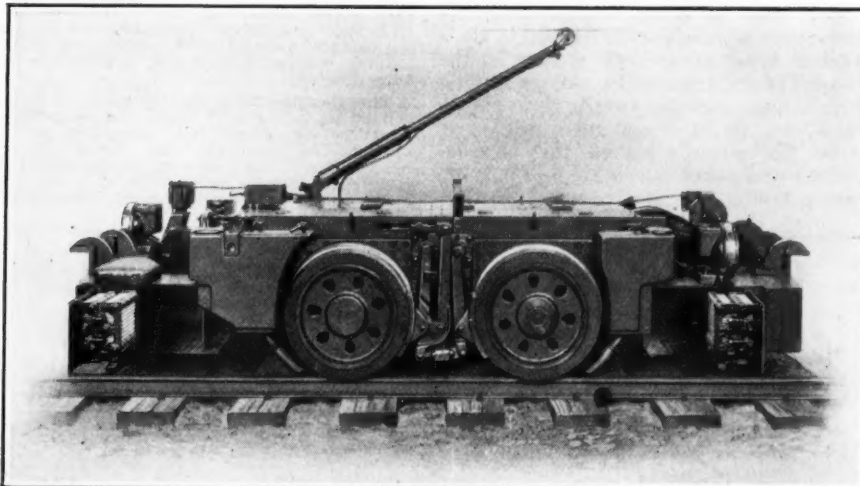
**For Slow Speed Drives**

This motor, designed especially for compressor drives, meets the increased demand for power-factor corrective equipment.

### Pockets in Side Frame Hold Locomotive Grid Resistor

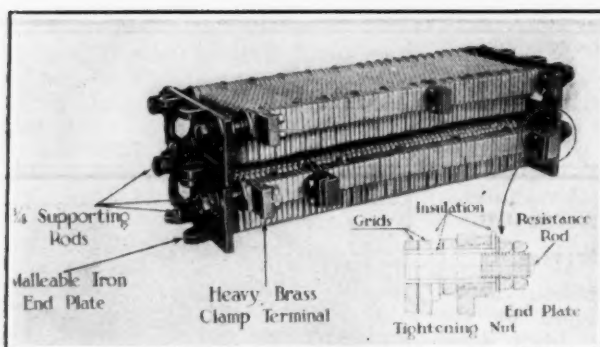
With small haulage and gathering locomotives built to provide low headroom it is difficult to find a convenient location for a resistor of large capacity, especially in view of the fact that it must be readily accessible for inspection. The accompanying illustration shows how the difficulty has been solved by the Jeffrey Manufacturing Co.

In designing its standard outside-wheel type of haulage and cable-reel locomotives in 4-, 6- and 8-ton sizes



**Handy Pockets Make Resistors Easily Accessible**

The resistance is hung on a hinged door which may be readily opened for inspection. With this arrangement it is easy to keep the resistance in repair and the locomotive operating properly.



### High Capacity Grids Built for Heavy Service

In the lower right-hand corner of the sketch is shown a threaded bushing which is used to tighten the grids. Thus the length of the sections remains the same.

it uses three pockets in the side frame for mounting sections of resistance.

The two sections are bolted to a hinged door, which when closed protects the resistor from injury. When the resistor is to be inspected or repaired it is only necessary to open the door of the pocket.

The special cast-alloy iron-grid resistor is standard for all Jeffrey loco-

motives. The grids are cast with the greater section of the metal parallel with the supporting rods, reducing vibration to a minimum.

The combination of these large current capacity grids with large diameter supporting rods, heavy malleable iron end plates and liberal brass-clamp connectors makes a thoroughly practical resistance for mine service.

### Jacket Water Cooler Adapted To Any Kind of Raw Water

All oil, gas-engine and compressor operators, and especially those who have been troubled by scale formation in engine jackets, excessive oil consumption, sticking piston rings, cylinder scoring or the other evils arising from overheated cylinders, will be interested in a new jacket water cooler.

This apparatus uses any kind of raw water to cool the circulating liquid. The liquid used can be distilled water. Only a small quantity is needed for it can be continuously circulated through the jackets, the shell space of the cooler being cooled in a closed system by the raw water passing through the cooling tubes.

This equipment is claimed to be highly efficient in its cooling action. It is also compact and constructed so as to permit easy inspection and cleaning. The manufacturers, The Griscom-Russell Co., are located at 90 West Street, New York.

### Electric Pusher Spots Cars

Cars may be easily spotted with the assistance of the General Electric Co.'s pusher type locomotive shown in the cut. These locomotives take a string which may include twenty-five empty cars and move them up into place. After the cars are loaded, they are detached and taken away to be made up into a train. The loaded cars are then

taken away by another locomotive, making the spotter locomotive available at all times for hauling the empty ones, thus eliminating delays in operation.

### Small Centrifugal Pumps

A new series of centrifugal pumps of small size to supplement the company's line of larger pumps is being placed on the market by the Wilson-Snyder Manufacturing Co., Pittsburgh. The new pumps are bronze-fitted, double-suction, and are said to have been designed simply and ruggedly. The pumps have been developed to operate with Westinghouse motors at their standard speeds of 1,150 r.p.m. and 1,750 r.p.m. for both direct current and alternating current service.

### Industrial Notes

The A. M. Byers Co., Pittsburgh, Pa., manufacturers of galvanized iron pipe, are spending several million dollars on additions and improvements in plant equipment. In the process of galvanizing, the pipe is drawn by means of a very slow speed conveyor through the galvanizing solution. At present clumsy and dangerous layouts of open gears are used to obtain the necessary speed reduction on the conveyor, but IXL spur gear speed reducers will be substituted when the new equipment is installed, making a compact, dependable and safe drive.

The Reading Iron Co., Reading, Pa., has rebuilt its boiler tube plant and placed R. I. Fretz in charge of the marketing of this unit of its products. Mr. Fretz assumes his duties after having represented the Bethlehem Steel Co. and the Midvale Steel & Ordnance Co. over a period of nine years.

### New Companies

The Coosa River Fuel Co. was incorporated in Gadsden, Ala., about the middle of February, by J. R. Alvers, W. B. Woods and others.

The Zimmerman Coal Co. was incorporated about the middle of February in Whitesburg, Ky., with a capital of \$50,000, by R. E. Chase, Clintwood, Va., and others.

The Torrid Coal Mining Co. has been incorporated in Denver, Colo., with a capital stock of \$50,000, by George Fruth, T. J. Stone and A. Pickens.

The Catlin Coal Corporation, with a capital of \$500,000, has been formed at Catlin, Ill., by C. E. Parker, H. T. Witwer and Claude Johnston.

The Richardson Fourth Vein Coal Co., of Linton, Ind., has been incorporated with a capital of \$50,000 by Thomas W. and Claude R. Richardson and John Kerzan, Jr.

The D. H. Brown Coal Co. was incorporated in Birmingham, Ala., early in February, with a capital stock of \$55,000, by James A. Mitchell, First National Bank Bldg., and Paul Lanier.

The Square Deal Co. has been incorporated at Boonville, Ind., with a capital stock of \$10,000, all common, to mine and sell coal. The incorporators are Curtis Smith, Homer Rayhill, Alvin Perkins, Edmond J. Branch and Phillip E. Smith.

The Canadian Coal & Clay Products, Ltd., of Ottawa, Ont., has been incorporated with a capital of \$50,000 to manufacture coal briquets, etc., by William Walters, John Batcham, Stephen Pallen and others.

The Montevallo Coal Mining Co. has been incorporated at Birmingham, Ala., by D. A. Thomas, P. B. Thomas and J. M. Chapman, to engage in the mining and sale of coal. D. A. Thomas is president and treasurer; J. M. Chapman, secretary. D. A. Thomas is a member of the firm of Thomas & Weller Mining Co., now operating the Aldrich Mines, producing the Montevallo domestic coal, the properties being under lease from the trustee in bankruptcy, and negotiations were reported under way some time ago for the purchase of the properties by Mr. Thomas and associates, though no official information was available concerning the deal.

Merrill Super-Power System, Inc., New York City, has been chartered at Albany with \$50,000 capital, to purchase inventions, processes and systems for the low-temperature distillation of coals, shales, lignites, etc. Joe E. Daniels, 411 W. End Ave., New York City; Ralph L. Merrill, 7922 Fort Hamilton Parkway, Brooklyn, N. Y., and David A. Woodcock, 141 Larchmont Ave., Larchmont, N. Y., are the directors and David A. Woodcock, Joe E. Daniels and Percy E. Williamson, Jr., 44 Cornell Ave., Yonkers, N. Y., are the subscribers. Duell, Anderson and Duell, 38 W. 44th St., New York City, are attorneys for the corporation.

### Obituary

Robert Stephens, Sr., 76, pioneer industrialist of the Birmingham (Ala.) district, died March 4 after a prolonged illness. Mr. Stephens was born in Cornwall, England, in 1848, and came to this country at 16 years of age, first working in the lead mines at Rossie, N. Y. He was shortly joined by his parents and was associated with his father and brother in the development of copper mines at Lenoxville, Canada, and in northern Michigan. Going to Birmingham in 1872 Mr. Stephens aided in the development of the McElvain mines and furnace construction and organized the Oxmoor Co. He built the old beehive ovens near Helena, Ala., from which was produced the first coke made in the state. He also aided in the construction of the Thomas Furnaces and the development of the ore mines of the Thomas Iron Co., properties now owned and operated by the Republic Iron & Steel Co. He was one of the organizers of the Stouts Mountain Coal & Coke Co. and was president and general manager of this organization for many years. Mr. Stephens retired from active business several years ago, having acquired extensive property interests and financial connections which required his attention. He is survived by his wife, and five children, besides several brothers and sisters.

### Shifter at Work

A pusher-type locomotive can spot a car exactly where required for loading. Quick service such as can be rendered by the device, saves time and trouble.

